CIOs at joint ventures must serve many masters. Eager developers will have to wait to lasso Longhorn.

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Haunted by the Past

SPECIAL REPORT
COMDEX FALL 2003

The survival plan that Comdex show organizers came up with earlier this year – to recast the event as one strictly focused on corporate IT – may have been brilliant. But few IT professionals appear to have gotten the message, and lingering perceptions of Comdex as an unwieldy, circuslike showcase of gadgets and consumer goods are keeping many of you and your vendors away. Our special report by Todd R. Weiss is on page 8.

ONLINE EXCLUSIVE: Your peers weigh in on Comdex:
QuickLink 42527 www.computerworld.com

Information Life-cycle Tools Appealing but Remain Distant

Better interoperability a first step, users say

BY LUCAS MEARIAN
ORLANDO

IT managers are intrigued by new technology designed to automatically manage data from creation to deletion. But many users at last week's Storage Networking World Fall 2003 conference here cautioned that so-called information life-cycle management approaches will require years of development.

To make the new concept work, conference attendees said, vendors will have to integrate storage devices, management tools and business applications and develop more robust policy-based engines that can dictate how, where and for how long data gets stored.

Some users said vendors should first concentrate on making their existing storage products more interoperable.

James Medeiros, information systems and services manager at United Parcel Service Inc., said he has yet to be convinced that Atlanta-based UPS should spend money on unproven life-cycle management technologies in an effort to make its storage management operations more efficient.

"As much as I'm out to eliminate multivendor tool sets and drive more policy-based management, I only have 25 storage [technicians] managing that infrastructure, compared to 4,700 IT workers overall," Medeiros said. "I'll take a beating on cost before I take a beating on reliability."

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Also at SNW
IT managers talk about what keeps them up at night:
QuickLink 42476

Shippers Face Big IT Security Costs but See Future Savings

The right mix of tools would boost efficiency

BY DAN VERTON
NEW YORK

Private port operators and shipping companies in the U.S. will likely be expected to pay for the bulk of the multibillion-dollar effort the government says is necessary to protect the nation's global supply chain from terrorist attacks.

But they may find that's not such a heavy burden. The right mix of IT-enabled security measures could turn the short-term expense into long-term savings, shipping industry representatives said last week.

The debate over whether the government or the private sector should bear the costs associated with IT security upgrades for the nation's maritime ports — which security experts say represent the biggest vulnerability to terrorist attacks involving weapons of mass destruction — was a central theme of last week's Maritime Security Expo here.

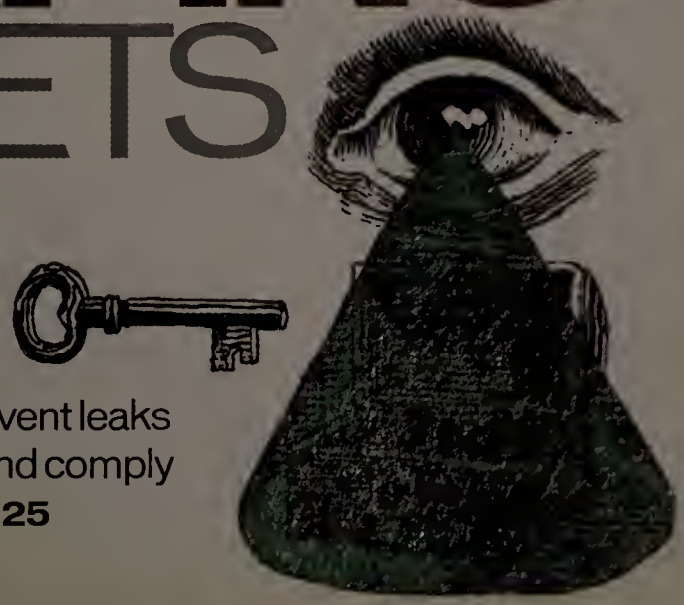
A frequently cited document at the event was a recent United Nations report that put the global shipping industry's cost for security this year at close to $2 billion. And that doesn't include the potential costs of retrofitting the existing worldwide fleet of 12 million shipping containers or building new "smart" containers from scratch.

Most shipping industry officials agreed that the private

Shippers, page 16

KEEPING SECRETS

VENDORS ARE RUSHING TO offer a variety of products, from content checkers to transaction trackers, in order to help companies prevent leaks of confidential information and comply with new privacy laws. **PAGE 25**



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NEWSPAPER

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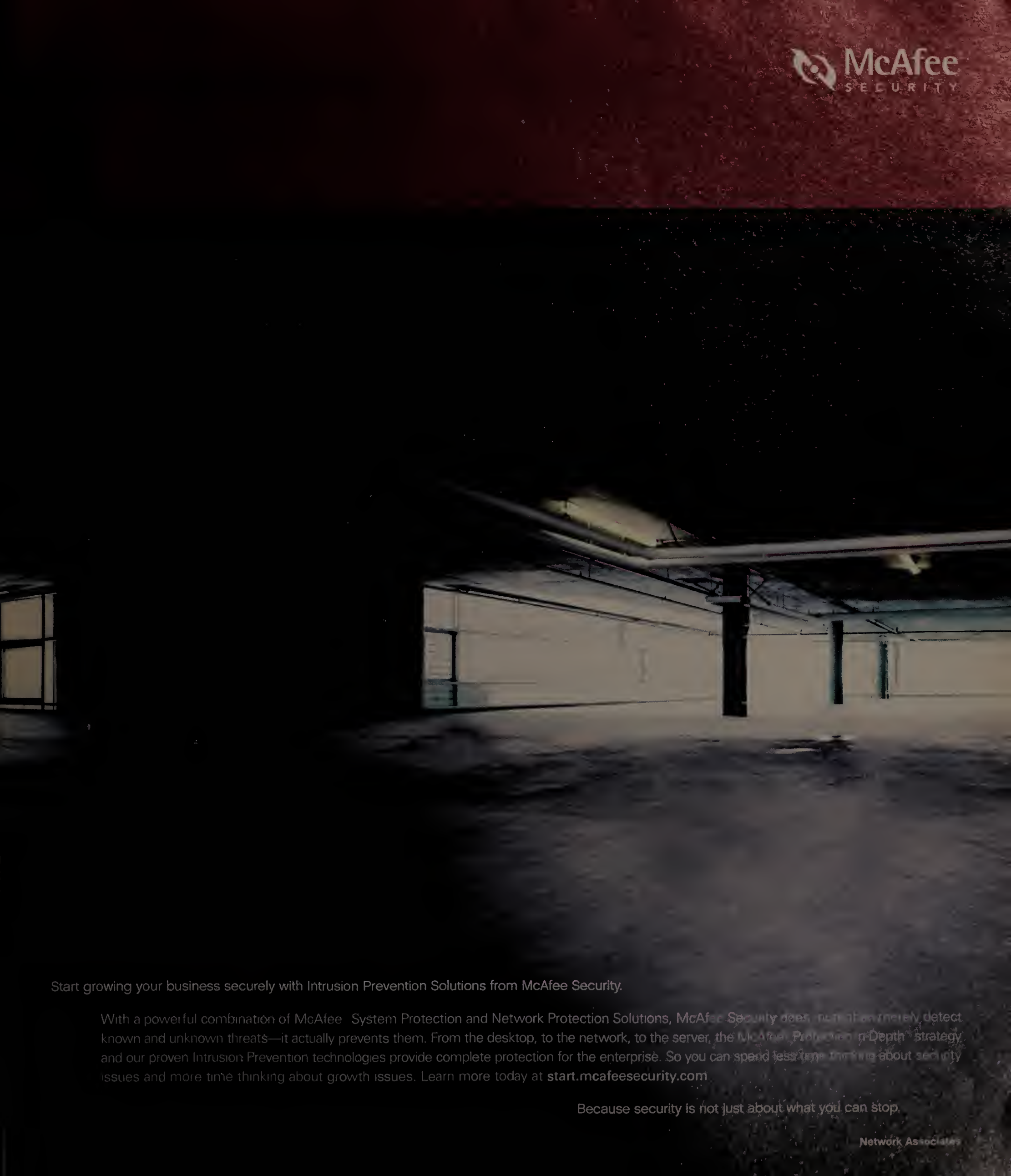

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Network Associates

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For the last decade, every processor chip in every personal computer in the world has been based on 32-bit architecture. It was the best technology we had. Until today. Introducing the revolutionary PowerPC G5 processor, the world's first 64-bit processor for personal computers.

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Before now, a chip this formidable could only be found in the world's fastest servers and supercomputers. Which is precisely where the G5 chip came from. Developed by IBM and Apple; the G5's DNA is from the core of IBM's highest-performance, 64-bit POWER4 processor. But just as impressive as the G5's pedigree is how it's manufactured. In IBM's (and the world's) most advanced semiconductor facility, the G5's 12-inch silicon wafers are untouched by human hands as robots guide them through 500

The 64-bit processor.

processing steps, creating 58 million transistors and connecting them with over 1000' of copper wire that's less than 1/800th the width of a human hair.

The new PowerPC G5 has a 1-gigahertz frontside bus* that moves data in and out of the processor almost twice as fast as the competition, removing a key bottleneck that limits performance. And it can support more than 200 in-flight instructions at a time –71% more than the 32-bit Pentium 4. Perhaps most importantly, the G5's 64-bit architecture can address dramatically more memory – over 4 billion times more than 32-bit chips – so that systems built around the G5 can shatter the 4-gigabyte memory ceiling that limits every other PC on earth. The 64-bit PowerPC G5. It's not just a new chip. It's the next chapter in personal computing.

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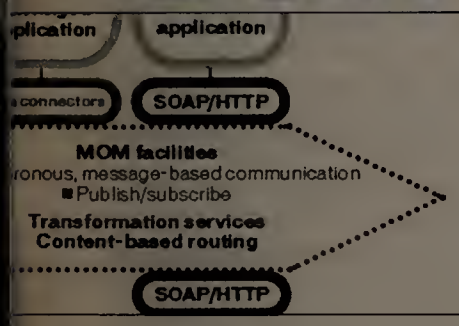

Early Riders

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Developing IT Skills 'To Go'

In the Management section: McDonald's Alice Rowland is spearheading a national IT apprenticeship program that combines classroom learning with on-the-job training. **Page 44**

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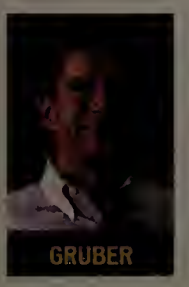
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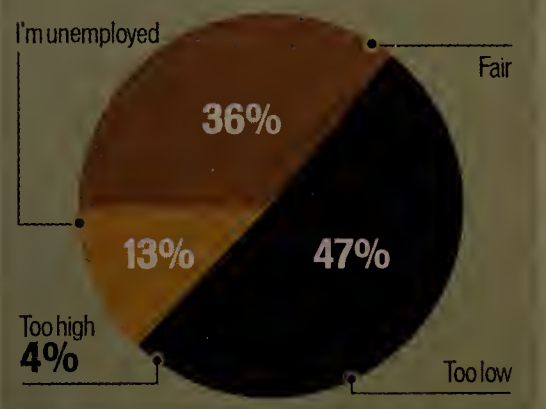

Take this week's QuickPoll at **www.computerworld.com.**

SOURCE: *COMPUTERWORLD.COM* NONSCIENTIFIC SURVEY, 616 VOTES

Four Ways to Secure Your Company on a Shoestring Budget

SECURITY: Even without a lot of funds for security, there are low-cost steps you can take to reduce risk. **QuickLink 42442**

Enhance WLAN Security

MOBILE/WIRELESS: Two consultants and a UCLA professor offer advice on fending off intruders with a smart antenna system and a layered architecture. **QuickLink 42456**

How to Build an RSS Feed

DEVELOPMENT: In this book excerpt from *Apache, MySQL, and PHP Weekend Crash Course*, the author shows how to use PHP for Web content syndication. **QuickLink 42396**

What's a QuickLink?

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Comdex's Past May Be Its Biggest Obstacle to Survival

Organizers fail to get message across that show has been refocused for IT

BY TODD R. WEISS

THE CORPORATE IT community appears not to have gotten the message that Comdex/Fall is being recast as a scaled-down event focusing exclusively on IT professionals. And that's bad news for show organizers who are pinning the event's survival on the new direction.

SPECIAL REPORT

A *Computerworld* poll of several dozen IT professionals last week indicated that respondents still perceive Comdex as being too big, too glitzy and too out of touch with the needs of corporate IT to warrant their attendance. Many were not aware of the following developments:

■ MediaLive International Inc., which was known as Key3Media Group Inc. until emerging from Chapter 11 bankruptcy earlier this year, unveiled plans to completely refocus the event in July [QuickLink 40163].

■ Instead of the approximately 200,000 attendees and 2,000 exhibitors hawking anything with a battery that thronged to Comdex in its mid-'90s heyday, about 50,000 qualified or paid attendees and some 500 corporate-IT-focused exhibitors are expected this year.

Eric Faurot, who became general manager of Comdex in April, said he expects that it will take time for the smaller, more tightly focused event to reconnect with some past exhibitors and attendees.

"I can't build a Comdex that has every company involved and has everything I want in it all in the first year," Faurot said. "We know it's Step 1."

Comments from IT professionals polled last week demonstrated how far Faurot has to go lure them back.

"The value of Comdex in the data management world is very limited. It's hard to get things done at a show that big," said Bob Leo, director of data management and administration at transportation services company Landstar System Inc. in Jacksonville, Fla.

Michael McClaskey, CIO at IT consulting vendor Perot Systems Corp. in Plano, Texas, echoed that assessment. "Comdex has become an extremely large and unfocused event, and it seems that increasingly little of significance for the enterprise really gets announced there," McClaskey said. "Our finite conference dollars are better spent in much more focused forums."

Carlos Recalde, executive director of technology at financial services company KPMG LLP in Montvale, N.J., said he hasn't attended Comdex for at least five years. "I think the value of this show was gone a while ago," he said.

Faurot acknowledged that the marketing challenge is a formidable one, and that the effort so far has yielded little to brag about.

No More 'Fluff'

"It's like anything that has a tremendously powerful brand — what's associated with that brand can be difficult to change in the minds of some," Faurot said. "It's . . . been around for 23 years" and become saturated with consumer electronics and peripheral products. "There wasn't any real, central focus," Faurot said. "So what ended up surfacing to the top was the gadgets."

But no more.

"Obviously, that stuff is not driving the IT industry right now," and it won't be at this year's show, Faurot said. "We've stripped out . . . all the stuff that was fluff."

Among the new features of this year's show, which is being held again at the Las Vegas Convention Center Nov. 16-20, are seven IT tracks being organized to help attendees learn more about specific technologies, including open-source and Linux, on-demand computing and security.

But changing the perceptions of IT professionals isn't the only challenge faced by show organizers.

The list of exhibitors so far has a few big names, including Microsoft Corp., AT&T Wireless Services Inc., and Dell Inc. But most are smaller companies. The vendor vacuum is highlighted by the fact that, although Linux will be a key theme, none of the major Linux vendors, including Red Hat Inc. and SUSE Linux AG, will have booths at the show.

Faurot acknowledged the missing pieces but said many companies, including Linux vendors, never saw themselves fitting into the Comdex of old and still haven't recognized the new focus. Moreover, he said, many companies that didn't sign up for booths are nonetheless participating in forums and meeting with customers off the show floor.

The hope is that such non-exhibiting participants as chip maker Advanced Micro Devices Inc., IBM, Sun Microsystems Inc., Cisco Systems Inc. and Oracle Corp. will find this year's show to be useful and sign up to exhibit next year, Faurot said. "There's a lot of stuff going on behind the scenes, but we still need to get them on the [exhibit] floor, and that's our goal moving forward," he said. "We have to prove ourselves.

Comdex is striving to change just as a competitor tries to unseat it as the premier IT show. Across town, Jupitermedia Corp. will hold its first Computer Digital Expo/Enterprise IT Week show at the Mandalay Bay Convention Center on the same days as Comdex. That show has signed up keynote speakers from IBM and Hewlett-Packard Co., among other companies.

"That's just fine. I think competition is good," Faurot said. "I think [Jupitermedia] saw us as a company in bankruptcy, and maybe they thought there was an opportunity." 42508

WHO'S GOING?

Exhibitor Angst

Many top vendors, like users, are waiting to see if Comdex organizers deliver on their promise to strictly target IT professionals.

The few key players exhibiting include the following:

■ Microsoft ■ Dell
■ AT&T Wireless

Despite the fact that Linux will be a core theme of the event,
NO-SHOWS include:

■ Red Hat ■ SUSE Linux

Past Attendees Might Return if Comdex Gets Serious

If the Comdex Fall 2003 show lives up to its billing as a smaller, IT-focused show without all the hoopla and gadgetry of the past, it just might accomplish its goal of luring back former attendees who gave up on it.

"If they truly do that, then I think I would be interested and would consider attending," said Dan Agronow, vice president of technology at Atlanta-based Weather.com. "It became a showcase for glitz. It was, how many trinkets can you collect? It lost some of the value it had because of focusing so much on the showmanship of the products."

Also, he said, the crowds had become so large that "it was very hard to try to pin the vendors down to get specific information."

Other former Comdex attendees agreed, saying they would be willing to give the show another chance if it makes good on its new promises.

ANN STATES

AGRONOW says Comdex had too much "showmanship" in past years.

"We may take a look at them next year to see if they're more IT-oriented," said Chris Collins, manager of enterprise architecture at grocery store chain Ahold USA, a division of Netherlands-based Royal Ahold Group. "Initially, when Comdex first started up . . . they were more consumer-driven than IT-driven. I didn't realize they were changing the thrust of the show."

Joe Poole, technical support manager at Reading, Pa.-based Boscov's Department Stores, said his company stopped sending employees to shows like Comdex stopped several years ago when IT budgets were tightened amid a flagging economy. But if the show becomes more compelling and useful for IT – and if his budget opens up – it could again be a possible destination, Poole said. "It's just a matter of how the whole economy turns up next year."

– *Todd R. Weiss*

Programmers Welcome Longhorn Demos, but the Wait Continues

Developers would like software to be ready sooner

BY CAROL SLIWA
LOS ANGELES

Programmers expressed keen interest in many of the code-named technologies that Microsoft Corp. demonstrated last week at its Professional Developers Conference here.

But the enthusiasm that many shared about the Avalon graphics subsystem, the Indigo communication technologies for building advanced Web services, and the WinFS storage model was tempered by the realization that it will be some time before they see the Windows operating system, code-named Longhorn, that will feature them.

"It's interesting, but I think it's going to be a long way out," said Christopher McCarthy, a Chicago-based senior systems engineer at Bank of America Corp. "This is too far out for us to evaluate."

Microsoft handed out a developer preview version of Longhorn and pledged to make a beta version available in the second half of 2004. But company executives declined to provide details about when they expect Longhorn to be completed, even though at past events they had shown slides projecting that Longhorn technologies could start to ship in 2005.

Jim Mangione, a West Point, Pa.-based technical specialist at Merck & Co., said he anticipates that Indigo will help with integration in the company's heterogeneous environment, which includes Windows and .Net as well as Linux and Java. "I'm just hoping it's in a production-ready state soon," he said.

Jeremy Lehman, senior vice president and head of technology at Thomson Financial in New York, said his company foresees a major commercial opportunity with Indigo, even though it's currently just "slideware." He said his company partners with Microsoft and other vendors to provide information and technology to financial services customers, and he hopes next year to be able to demonstrate products that use Indigo for exchanging data via Web services.

Lehman said proprietary middleware systems tend to work only with companies' internal systems, whereas Web services can be used on an internal and external basis. He said he expects Indigo to help to ease integration, lower costs and reduce complexity. But Lehman is also cognizant of Indigo's immaturity, and he said he expects to have to wait for its successor to get rich functionality for transactions.

Roy Schulte, an analyst at Gartner Inc., explained that Indigo is a superset of Microsoft's Messaging Queuing (MSMQ) technology and its Component Object Model (COM), COM+, .Net remoting and Web services support. "Think of this as a simplification, a unification of communication middleware on behalf of Microsoft's plan," Schulte said.

Indigo will enable developers to more easily deliver secure, reliable and transacted messages by including the "tricky" security code and other plumbing code that nobody "would voluntarily likely want to do," said John Shewchuk, an architect on the Indigo team.

Microsoft currently delivers some of those capabilities through its Web Services Enhancement (WSE) tool kit, and about half of Indigo is WSE, according to Eric Rudder, Microsoft's senior vice president of servers and tools. But the Web services specifications on which WSE is based are still being finalized.

New graphics capabilities in Avalon appeal to John Robbins, a Bloomfield, Conn.-based systems architect at Cigna Corp. He said the new Extensible Application Markup Language's (XAML) ability to separate code from content will be helpful, because it will allow a graphics person to design the interface and then hand off the XAML file to a developer to create the code behind it. He also said XAML could be useful for working with third-party design tools.

The new WinFS storage system was most interesting to Luke Voss, a software engineer at the Jet Propulsion Laboratory in Pasadena, Calif. He said the lab currently uses a relational database to capture relationships between sets of data, but it makes more sense to unify the framework with the file system. The benefit will be universal data access and better searching capabilities, he said. "I don't think WinFS will be something that solves specific problems, but it will change the way we look at the problem," he said. "Data will be more important than files." 42511

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Cracking the Code Names

LONGHORN: Next major release of Windows operating system. **Due:** Undetermined, but not before 2005. Beta expected in the second half of 2004.

AVALON: New presentation system for Windows featuring hardware-accelerated, unified graphics programming model for 2D, 3D, video and animation and common programming model for building user interfaces, documents, graphics and media. **Due:** With Longhorn.

INDIGO: Communications infrastructure and programming model for building advanced service-oriented applications; provides plumbing code for secure, reliable, transacted messaging. **Due:** With Longhorn.

XAML: Microsoft-created markup language for building Windows applications; separates code from content, enabling designers and developers to collaborate. **Due:** With Longhorn.

WHIDBEY: Next release of Visual Studio .Net development tools. **Due:** 2004.

WHITEHORSE: Set of tools for designing service-oriented applications and operations infrastructure simultaneously; uses drag-and-drop design surface to connect XML Web services. **Due:** With Whidbey.

WinFS: Storage subsystem in Longhorn; combines file data, relational data and XML data. **Due:** With Longhorn.

WinFX: New Windows programming model, next step beyond Win 32. **Due:** With Longhorn.

Microsoft Exec Shares Details About Longhorn and Indigo

LOS ANGELES

Eric Rudder, senior vice president of servers and tools at Microsoft, spoke with *Computerworld*'s Carol Sliwa last week about new technologies that the company detailed at its Professional Developers Conference here. Excerpts from the interview follow:

When will we see the new technologies that Microsoft demonstrated here? I think more important than exactly when is that we've gone out of our way to share our thinking with the community and get feedback early. We take a bit of a risk. . . . But I think I've been clear with my team certainly [that] I'd absolutely run the risk of disclosing too much rather than disclosing too little.

We absolutely will deliver Yukon, the next version of SQL Server, and Whidbey, the next version of Visual Studio, shortly . . . in the second half of 2004. We think of that as together in the same wave, and Longhorn sometime after that.

Microsoft recently listed Longhorn, the next major Windows release, for 2005 and beyond. Is 2005 still a possibility? We're more focused on building the right product with the right quality, and those things will determine our schedule.

A Gartner analyst characterized Indigo, the code name for communications technology for building advanced Web services, as an enterprise service bus (ESB). Do you agree? We've showed [off] Indigo as the technology for our Web services runtime. I think people will build enterprise service bus strategies that encompass a variety of technologies, and hopefully it's Web-service-based. We can actually run over multiple transports. So you might choose to run it over TCP or HTTP or your other messaging strategies like MS MQ or Tibco. I think you'll see a combination.

Does Indigo include message-oriented middleware? Indigo is middleware in some sense.

Will Indigo be competitive with message-oriented middleware products? It can be complementary.

Indigo is targeted for Longhorn. Will Microsoft make Indigo available for Windows Server 2003? If the reaction from customers is great and they want Web services technology on 2003, it's definitely something we'll consider.

MORE COVERAGE
To read more about ESB technology, turn to page 30.
To read the complete interview with Rudder, go online to
QuickLink 42531
www.computerworld.com

AT DEADLINE

CA Readies Suite Of Identity Tools

Computer Associates International Inc. said it's combining six products from its eTrust security software line into a unified set of identity and access management tools. The plan, which follows similar moves by IBM and other rivals, will be detailed this week along with an upgrade of CA's eTrust Admin software. New releases of the other tools are due to be announced in May.

HP Stops Selling Its e3000 Systems

Hewlett-Packard Co. ended sales of its HP e3000 midrange systems on Oct. 31, completing a phaseout process that started two years ago. Some e3000 users marked the occasion by holding informal "wakes" at bars and backyard barbecues. HP will continue to offer CPU upgrades and e3000 peripherals for the next 12 months and will support the system until the end of 2006.

Problem Affects Antipiracy Tool

Symantec Corp. said it's investigating a problem that's affecting an antipiracy tool built into its Norton AntiVirus 2004 desktop software. The tool is repeatedly prompting some users to reenter product activation codes when they reboot their PCs, Symantec said. The Cupertino, Calif.-based company also announced that it's buying ON Technology Corp. in Waltham, Mass., for $100 million in cash.

Palm Completes Purchase, Spin-off

Palm Inc. completed its acquisition of Handspring Inc. and spun off its PalmSource Inc. operating system unit into a separate company. Milpitas, Calif.-based Palm also renamed itself palmOne Inc. as part of its deal with Mountain View, Calif.-based Handspring.

MARK HALL ▪ ON THE MARK

Outsourcing Deals Fail Half the Time . . .

. . . because most companies lack data on how well **internal operations stack up against so-called cheap, external competitors.** Pointing to market research by Giga Information Group Inc. and others, Jason Schroedl, director of corporate marketing at newScale Inc., claims that more than 50% of IT outsourcing agreements fail for lack of comparative information. "You need to know how well your outsourcer stacks up against your internal offerings," he says, or you increase the risk of having an outsourcing deal collapse. For example, companies often discover that much of the money saved by sending work outside is eaten up by the costs of managing the outsourcer relationship. Also common is for the **outsider to bungle the service quality.** Arming yourself with apple-to-apple cost comparisons and measurable service-level agreements can boost outsourcing success rates to higher than 75%, Schroedl says. That's because you might discover that **the best and most cost-effective work can be done inside** the organization, so you outsource fewer tasks. Those metrics will be among the improvements in Foster City, Calif.-based newScale's release of RequestCenter 2004 late this quarter. The upgrade, which comes packed with more than 500 built-in best practices for establishing and measuring a service offering, starts at $400 per user. ▪ **Developers generally get the short end of the services stick.** Few vendors think about their needs. Oh, sure, there are tools, utilities and much more, but there's little comparative information. Charles Stack, CEO of Flashline Inc. in Cleveland, thinks the lack is particularly **striking when it comes to open-source technology.** "Developers need comparative data between open-source and commercial products," he says. So, with the release today of FlashPack for Open Source, Stack contends, you'll be able to see how much you can save by using, say, JBOD instead of WebSphere, or Linux in place of Windows or Solaris. You can also set up the software to track assets and publicize product support processes. FlashPack requires the Flashline Registry, which has broader functions for developers and managers and starts at $70,000. ▪ Crashing Windows systems may be less of a problem with Microsoft's recent operating system releases, but they're by no means a thing of the past. And Bob Nolan, CEO of Raxco Software Inc. in Gaithersburg, Md., claims that Microsoft's System Restore feature "doesn't restore all your apps or data." And in his opinion, using backup products is a time-consuming pain in the butt. **Assuming you haven't suffered a hard drive meltdown,** Raxco's new FirstDefense ISR can restore the drive to a preproblem state from one of 10 prior user-selected snapshots the software has taken and stored on the drive. Furthermore, FirstDefense lets you "anchor" files or folders to it, so that their data is always kept current, even if the data has been updated after a snapshot. The software runs as a preboot operation, so a user can tell the utility to **reboot to a state prior to the crash.** The server version ships next week for $395, and a workstation release can be expected later this quarter for $49.95. ▪ Chat with Caroline Smith at Travelocity.com LP, a Fort Worth, Texas-based subsidiary of Sabre Inc., and you'll get a lesson or two in how to spend IT's budget. The director of database marketing and CRM for the online travel service recounts how she shifted the company's data warehouse work from Oracle to technology from Teradata Corp. in San Diego. "We were going to have to shell out **more money with Teradata, and it would have cost us nothing to stay with Oracle,"** she recalls. Plus, she says, they had trained Oracle database administrators and had a successful implementation of Oracle for online transactions. Why shift these pricey gears? Simple. End-user business analysts would be able to develop profitable programs gleaned from warehouse intelligence without needing constant administrator help, she says. And they'd be able to construct queries of the warehouse not possible in Oracle. Smith's conclusion: "The cost of things you can't do is often the most expensive." Amen. **42491**

Dantz With Me

If your smaller remote sites have data worth backing up but the folks out there can't quite figure out tape systems, consider the new Retrospect Disk-to-Disk edition, which is available today for $299 from Dantz Development Corp. in Walnut Creek, Calif. The software regularly backs up as much as 300GB of data to a pair of low-cost hard drives. No tape fiddling necessary.

Con Edison Unifies Network Management

BY MATT HAMBLEN

Con Edison Communications LLC last week began testing new management software from Hewlett-Packard Co. on the fiber-optic network it operates in the New York metropolitan area, with the goal of unifying management of all devices on the network.

Orlando Hernandez, director of IT at the subsidiary of Consolidated Edison Inc. in New York, said he hopes to put the HP OpenView Network Node Manager software into production this month. He added that officials at Con Edison Communications want network administrators to be able to monitor all 250 Ethernet elements on its metropolitan-area network from a single management console.

Hernandez said the unified view should enable the administrators to react more quickly when problems occur on the 3-year-old commercial network, which has about 200 business customers.

By year's end, Con Edison also plans to install a second HP product called OpenView Operations. It will be used to automate management of the company's back-office systems, including LAN and WAN applications such as an Oracle database and Windows Active Directory services.

Hernandez said the two HP applications are expected to cost about $100,000, including installation. Con Edison has already spent more than $1 million to roll out HP's OpenView TeMIP Operations Support system, which offers a set of telecommunications infrastructure management capabilities, including fault management and service activation tools.

Network Node Manager will feed network alarms and fault information into the TeMIP software, according to Hernandez. It should also lessen the need for Con Edison's IT staffers to write custom software modules to configure new network devices. "Developer time is money, and it makes no sense to recreate the wheel," he said. **42515**

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Offshore Risks Are Numerous, Say Those Who Craft Contracts

Due-diligence process needed to ensure security measures, backup plan in place

BY PATRICK THIBODEAU
NEW YORK

IT MANAGERS who cut corners in their offshore outsourcing contracts may jeopardize their companies' security and intellectual property and could well undermine expected cost savings, attorneys who negotiate these deals warned last week.

The potential pitfalls are numerous, and companies can't take anything for granted. If an offshore provider says it has a backup plan, for instance, don't assume that it will work, said Marina Gracias, deputy general counsel at Providian Bancorp Services in San Francisco.

"If all these backup plans are there, that's great," Gracias told an American Conference Institute forum here last week. "But have somebody test it."

Carefully outline the process for ordering changes to the work being performed, and stick to it, said Mark Grossman, a Miami-based attorney at Becker & Poliakoff PA. It's easy for companies to lose track of change orders in multiple e-mail exchanges with a vendor and end up with unexpected bills.

Find out how stable an outsourcer's workforce is, advised Dennis Sholl, CEO of Global Vantedge Inc., a Larkspur, Calif., provider of credit services. Managers at offshore service providers can quickly find work with another provider if they aren't happy, said Sholl. So make sure your provider has a career advancement path in place for them, he said. "Don't just ask what their attrition rate is," he said. "Find out how they measure it."

A lot of the advice offered at the forum would apply to any outsourcing contract. But differing legal standards and cultural norms can create uncertainties in offshore deals. The concept of time, for instance, doesn't mean the same thing in all cultures. "When somebody says, 'It will get done shortly,' . . . it could mean one day or a couple of years," said Bijesh Thakker, an attorney at Thakker & Thakker in Bangalore, India.

To protect themselves, companies need to go through an exhaustive due-diligence process and examine every possible contingency, outsourcing experts and users advised.

Companies moving work to an offshore provider can significantly increase costs if transition details aren't spelled out, said Cliff Justice, managing director at NeoIT Inc., a San Ramon, Calif.-based offshore consulting firm. U.S. companies may run parallel IT processes before they're comfortable enough to hand off the work. Get that transition wrong and "it will duplicate costs and create a situation where ROI is extended out years," Justice said.

Security is a major issue. Orrie Dinstein, senior counsel at a financial services firm that he requested not be identified, said users need to consider how data is classified and what level of security and encryption is applied to it. Periodic security checks, including penetration testing, are good practice, he said.

It's also important that user companies get consensus internally and set clear objectives before signing an outsourcing agreement.

"You've got to be able to demonstrate your savings, and they have to be unambiguous," said Akiba Stern, an attorney at Shaw Pittman LLP in New York. Offshore agreements are "going to be sold to your management on the basis of costs," Stern said.

And companies have to consider all of the expenses: travel, management and telecommunications costs, as well as the risk of additional future costs. "What happens if the privacy laws change again? Is that something that is priced into the deal?" asked Stern.

Companies have to be certain that they have nailed down all the terms before an outsourcing contract is signed.

"Your greatest leverage is before you sign a deal," said Mark Feingold, corporate counsel at Aventis Pharmaceuticals Inc. in Bridgewater, N.J. **42504**

Offshore Checklist

- **DETAIL** service-level agreements and delivery requirements.
- **ARRANGE** performance measurements, ongoing monitoring and provisions for audits.
- **ASSESS** the vendor's workforce stability.
- **ASCERTAIN** what customers your vendor has lost
- **DETERMINE** how your data is protected if your vendor is working with your competitors.
- **STIPULATE** security and background-check policies.
- **ENSURE** compliance with all laws.
- **GET** everything in writing.

Calif. Wildfires Test Backup Readiness of IT Systems

Many companies fend off downtime

BY LINDA ROSENCRANCE

The wildfires that ravaged California last week put the disaster preparedness of many companies' IT systems to the test. Those able to report a passing grade were demonstrably relieved.

For example, although fires in San Diego County caused widespread power outages and threatened its headquarters, document conversion company ADCS Inc.'s IT systems kept the business up and running.

Cliff Rittel, director of IT at Poway, Calif.-based ADCS, credited his infrastructure power and cooling system from West Kingston, R.I.-based American Power Conversion Corp. (APC).

Rittel said that even though the area experienced numerous power spikes and outages on Oct. 26, ADCS experienced no communications or server downtime because of its APC InfaStruXure power and cooling system.

"Our Poway headquarters is our main network operations center for telecommunications, mail system and VPN connections worldwide, so the mission-critical uptime was paramount," he said.

FIRE COVERAGE
California's disaster response system got a workout:
QuickLink 42486
www.computerworld.com

Rittel also said his company's telecommunications systems were unaffected because its service provider, AT&T Corp., had laid its fiber-optic cable underground.

Meanwhile, Navy/Marine Corps Intranet (N/MCI) contractor Electronic Data Systems Corp. temporarily transferred help desk services from its facility in San Diego to Norfolk, Va.

Kevin Clarke, a spokesman for Plano, Texas-based EDS, said his company took the San Diego facility off-line for about 24 hours beginning the morning of Oct. 27. "There was no interruption of service," Clarke said. "We built the N/MCI infrastructure to do just this."

Atlanta-based Cingular Wireless said in a statement issued Oct. 29 that less than 1% of its cell towers in the San Diego and Los Angeles areas were affected by the fires.

"Service restoration efforts have brought almost 80% of the sites back online," the company said. "Those sites that have not been restored are in areas currently inaccessible due to safety concerns or have been destroyed and are being rebuilt."

Cingular said it deployed 25 backup generators to augment commercial power losses at cell sites and deployed mobile wireless facilities.

Laura Oberhelman, a spokeswoman for Atlanta-based Cox Communications Inc., said the company's network had performed with 98% of its customers in the affected areas, encountering no loss of service. **42480**

WILDFIRES IN CALIFORNIA are testing companies' disaster preparedness. THE ASSOCIATED PRESS

Federal Agencies Extend Deals With MCI Despite Its GSA-Mandated Suspension

Some agencies say the extensions are temporary; senator seeks justifications

BY MATT HAMBLEN AND DAN VERTON

Several federal agencies recently extended network service contracts with MCI, and one awarded it a small new deal, despite a July decision by the U.S. General Services Administration (GSA) to suspend the company from competing for contracts.

For example, the Defense Information Systems Agency (DISA) last week said it has renewed four contracts with MCI and added a new pact for an emergency telephone system. According to DISA, the total value of the extensions and the phone system contract is $117.9 million.

Under federal acquisition rules, agencies can continue to do business with suspended contractors if they determine that there are compelling reasons to do so, such as national security. But the moves by DISA, the Department of Justice, the Social Security Administration and the Armed Forces Retirement Home have caught the attention of Sen. Susan Collins (R-Maine), chairman of the Senate Governmental Affairs Committee.

Collins has asked each agency by the end of this week to provide details about all of the contracts they have initiated or extended with MCI since the company's debarment and to spell out their reasons for doing so.

DISA spokeswoman Betsy Flood said the agency's recent dealings with MCI were necessary, but she declined to disclose detailed reasons. Flood said DISA officials notified the GSA about the four extensions and the new Government Emergency Telephone System (GETS) contract, a one-year deal worth $1.7 million.

> **"There's no way in the world you can change your phones overnight."**
>
> **FRED RAO,** CHIEF OF MANAGEMENT INFORMATION SYSTEMS, ARMED FORCES RETIREMENT HOME

By far, the largest extension awarded by DISA was the renewal of a contract for digital satellite transmission services in the Pacific Ocean that's projected to be worth $80 million during the next 12 months. However, Flood said a selection process is under way to find an alternative source for those services.

Fred Rao, chief of management information systems at the Armed Forces Retirement Home, said that agency also is looking for a new service provider after giving MCI an extension of only 90 days on a 4-year-old contract for 600 voice communications lines.

Rao added that the extension, which took effect Oct. 1, was needed because a contract with another vendor couldn't be put into place quickly enough following MCI's debarment. "There's no way in the world you can change your phones overnight," he said.

The GSA suspended MCI, which is still officially known as WorldCom Inc., after determining that the company had yet to adequately revamp its internal accounting controls and business ethics following the accounting scandal that forced it to seek bankruptcy protection [QuickLink 40319].

MCI spokeswoman Natasha Haubold defended the recent contract awards. "These were primarily extensions to existing contracts, and we didn't initiate these extensions," Haubold said. "They were put in place to avoid service disruptions that could affect the national security and the citizens of the United States."

Asked about the GETS contract, Haubold said the new phone system was designed to address national security by giving priority to emergency calls during crises such as the Sept. 11 terrorist attacks.

She noted that MCI has lost other contracts because of the GSA's suspension. For example, the National Guard awarded Sprint Corp. a network deal that replaced an expiring contract with MCI, according to Haubold. 42506

Goodyear Hits $100M Bump With ERP System

Tire maker will have to restate financial results

BY MARC L. SONGINI

Goodyear Tire & Rubber Co. last week said it's still investigating what went wrong with its financial systems and caused a major accounting blowout at the company.

The Akron, Ohio-based tire maker added that it hasn't set a firm target date for completing a planned fix of the balky systems, which include a corporate accounting system based on SAP AG's ERP software plus a set of older applications that are used for intercompany billing.

Goodyear on Oct. 22 disclosed that it would have to restate its financial results back to 1998, partly because of financial errors resulting from a faulty implementation of the accounting system. It also cited processing malfunctions on the intercompany systems.

One thing is certain: Goodyear will take a big financial hit as a result of the system snafus. In a statement, the company said it expects to lower the net income it reported during the restatement period by as much as $100 million. In addition, the company postponed the release of its results for this year's third quarter (see chart).

The SAP-based ERP system was installed in 1999 and runs Goodyear's core accounting functions. Meanwhile, the intercompany billing systems handle internal transactions on purchases of raw materials made centrally for use throughout the company's global operations, according to a Goodyear spokesman.

System Fallout

- **Goodyear will restate** its financial results for the years 1998 through 2002 and for the first half of this year.
- **Up to $100 million in profits** will be wiped off the company's books, although it said revenue won't be affected.
- **The scheduled announcement of Goodyear's** third-quarter results was delayed from Oct. 23 to mid-November.

Goodyear declined to make any of its IT managers available to comment about the matter. The company absolved SAP's software from any blame, saying that the problems stemmed from the way the applications were installed.

"It's important to note that we said the situation involved the implementation of the ERP [software] and did not say we had a problem with the software itself," the Goodyear spokesman said.

He added that company officials currently are "identifying where the errors were" in the ERP rollout and the internal billing systems so that fixes can be made and accounting procedures improved.

Goodyear got consulting help on the SAP project from PricewaterhouseCoopers and J.D. Power and Associates, according to the tire maker's spokesman. He said Goodyear isn't contemplating any legal actions against the consulting firms at this point.

Nor does Goodyear plan to make any management changes within its IT department pending the outcome of the ongoing internal review, the spokesman said. In addition, the company has no plans to replace the affected systems with new ones.

William Wohl, a spokesman for SAP America Inc. in Newtown Square, Pa., said Goodyear has been a customer since 1994 and described the relationship between the two companies as "very successful, strong and strategic." Wohl added that SAP is willing to help Goodyear resolve the problems, but the tire maker said it doesn't expect to need any assistance.

SAP's software is one of the most mature accounting applications on the market, said Karen Peterson, an analyst at Gartner Inc.

Noting that this is the biggest accounting systems failure she has heard of in recent years, Peterson said it underscores the need for users to fully test new ERP systems and carefully scrutinize the financial data they produce before going live with the software. 42459

FINANCE UPGRADE

Oracle plans to announce a new release of its treasury management software:

QuickLink 42474
www.computerworld.com

Sarbanes-Oxley Mandates Lead to IT Certification Push

Corporate execs call on IT managers to document controls on finance systems

BY THOMAS HOFFMAN

CEOs AND chief financial officers who are obligated by the Sarbanes-Oxley Act to stand behind the financial accounting controls used by their companies are increasingly asking operating units, including IT, to certify that they have put adequate safeguards in place.

"I'm hearing a lot of discussion about that," said Chris McLaughlin, global director of financial services marketing at FileNet Corp., a Costa Mesa, Calif.-based software vendor that sells document management tools for use in Sarbanes-Oxley compliance projects.

With CEOs and CFOs now being held accountable for the accuracy of the financial reporting at their companies, "they are looking for ways to distribute that responsibility downward through their organizations," McLaughlin said. That includes asking IT managers to certify the systems used to process financial data, he added.

Some companies are doing internal audits using certification standards such as SAS 70 to give their IT operations the equivalent of a Good Housekeeping Seal of Approval.

SAS 70 — known formally as the Statement on Auditing Standards No. 70, Service Organizations — was developed by the New York-based American Institute of Certified Public Accountants (see box).

In addition, some outsourcing vendors have started offering SAS 70 audits to their clients. That was an unexpected windfall for Energy Absorption Systems Inc. after the Chicago-based maker of highway crash barriers hired an application service provider (ASP) earlier this year to manage its finance applications.

"We see them as another group to help us improve on our internal controls," said Bob Latek, senior vice president and controller at Energy Absorption Systems.

Latek, who spoke at an IT conference for CFOs last month [QuickLink 42353], said that letting the ASP run the certification process should help his company cut its Sarbanes-Oxley compliance costs in half "and save us a lot of time, too."

Anthony Noble, director of IT audits at Viacom Inc., said that at the next meeting of the company's divisional CIOs in January, he plans to raise the issue of whether the New York-based parent company of MTV, CBS, Blockbuster Video and other entertainment businesses should conduct IT certifications.

Noble said he understands the potential usefulness of such certifications as a sort of "life insurance policy." But he added that he's skeptical about the way some big auditing firms are using SAS 70 as a sales tool to generate incremental business through Sarbanes-Oxley consulting deals.

Ed Trainor, senior vice president of information systems at Paramount Pictures Corp., a Hollywood-based Viacom unit, said IT certifications "are a commendable thing to do for a variety of reasons." However, they "require a considerable investment, and the benefit must be weighed against other needs and priorities for scarce resources," added Trainor, who is also president of the Chicago-based Society for Information Management.

The SAS 70 Type II report that companies can use to document the effectiveness of their internal IT controls will have to be updated to meet requirements specific to Sarbanes-Oxley, such as quantifying the extent of testing done on financial systems, said Lynn Edelson, a Los Angeles-based consultant at PricewaterhouseCoopers. 42512

SAS 70

WHAT IT IS: An auditing standard designed to **show that a "service organization" has done an in-depth examination** of its internal controls.

HOW IT WORKS: Most certifications related to Sarbanes-Oxley use a so-called Type II report, **which describes the controls plus provides for detailed testing** of them for at least six months.

SOURCE: THE AMERICAN INSTITUTE OF CERTIFIED PUBLIC ACCOUNTANTS (WWW.SAS70.COM/ABOUT.HTM)

Companies Get More Compliance Tool Options

It's welcome news for those struggling to meet new regulatory requirements

BY JAIKUMAR VIJAYAN

Companies looking for tools to help them monitor their compliance with privacy and other regulatory requirements have a couple of new offerings to consider.

IBM Global Services last week announced a service aimed at helping corporations comply with privacy regulations related to the collection and use of personal information on their Web sites.

IBM will deliver the service in collaboration with Watchfire Corp. The Waltham, Mass.-based security vendor has been selling compliance management software as a part of a wider Web quality assurance product for several years. Under an agreement announced last week, IBM will use the Watchfire technology to deliver a subscription-based managed compliance monitoring service.

The service will use Watchfire's software to monitor Web sites for things such as data collection and sharing practices, opt-in and opt-out choices, broken links, missing privacy policies, third-party linking and the use of tracking technologies, said John Burg, a privacy services manager at IBM.

The company also sells compliance technology called Tivoli Privacy Manager, which monitors and enforces privacy policies at the application and transaction level. Watchfire's technology adds a Web monitoring capability.

A company with a Web site that has about 10,000 pages can expect to pay $40,000 in initial assessment and validation costs and then a monthly fee of up to $15,000 for IBM's compliance service, Burg said.

"Humans couldn't possibly do such automated monitoring," said Monica Champion, senior vice president of Internet and e-business at Atlanta-based SunTrust Banks Inc.

Privacy Patrol

IBM's compliance offering will provide:

- **Assessment and validation services to identify potential problem areas.**
- **Services to help develop and implement privacy policies.**
- **Monitoring services to ensure compliance with policies.**

The bank is using Watchfire's WebXM software to scan and monitor its Web site for violations of preset privacy policies [QuickLink 41118]. "It allows you to ensure that you are doing what you say you are doing," Champion said.

Meeting Mandates

Meanwhile, Consul Risk Management Inc., a Delft, Netherlands-based company with U.S. headquarters in Herndon, Va., last week rolled out software designed to help companies monitor compliance with the requirements of the Sarbanes-Oxley Act.

The offering is a module for Consul's InSight Security Manager 5.0 suite of security event management and auditing software. The software allows companies to monitor and audit user access to data across a wide range of operating environments, said Marc vanZadelhoff, director of product development at Consul.

The Philadelphia Stock Exchange is using an early version of the software to monitor user access to a mix of Unix, IBM mainframe and proprietary Stratus Technologies Inc. VOS operating system environments.

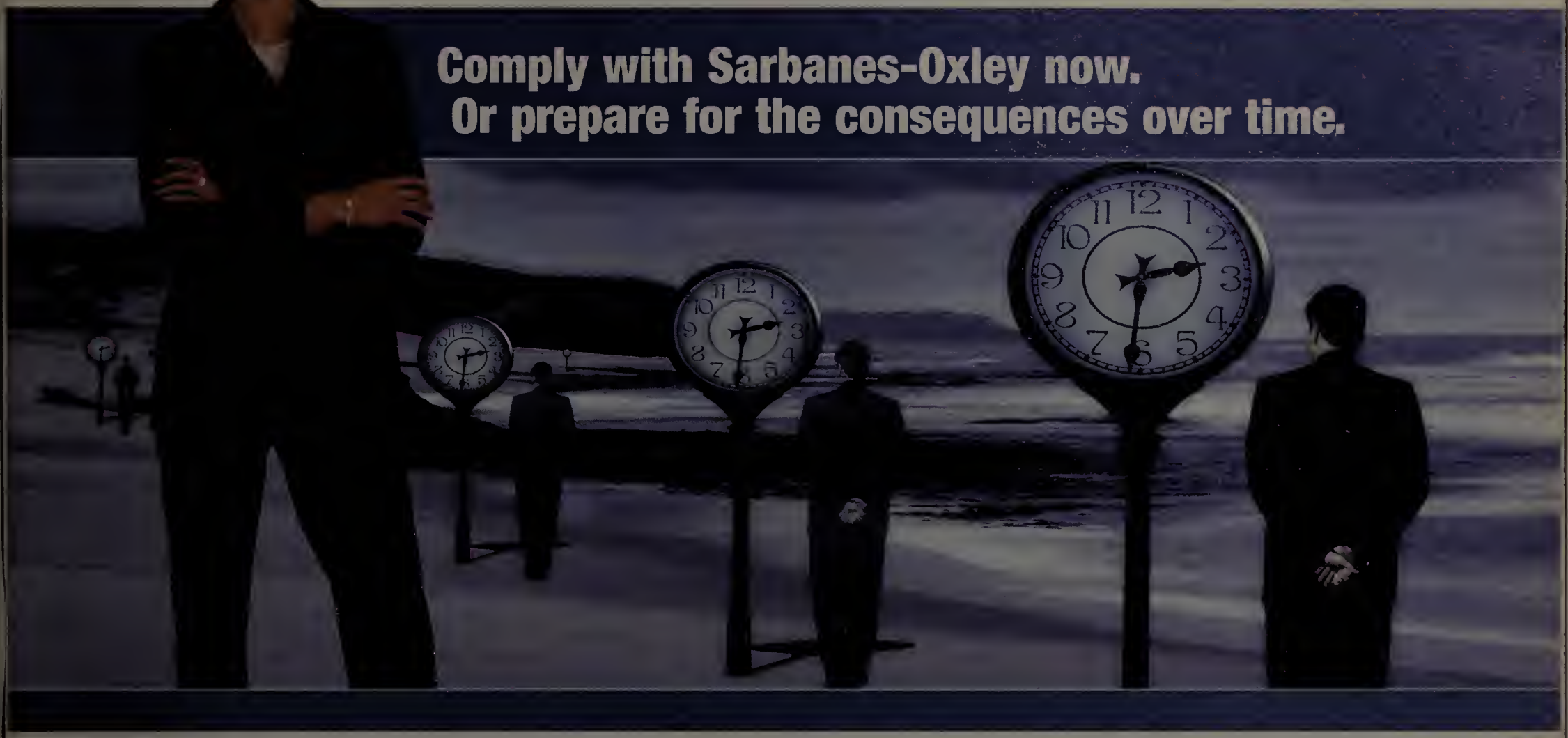
Consul's software allows the stock exchange to gather log information from all those systems and present it in a standardized form in a Windows system, said Bernie Donnelly, the exchange's vice president of quality assurance. "We want to keep track internally of who is going where and for what," Donnelly said.

The starting price for Consul's Sarbanes-Oxley module is $40,000. 42505

MORE THIS ISSUE

For related coverage, see "Keeping Secrets" on **page 25** and Maryfran Johnson's editorial on **page 20**.

SAS, the leader in business intelligence software, challenges...



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BRIEFS

Linux Group Adds 2.6 Test Release

Open Source Development Labs Inc. said a new version of the Linux 2.6 kernel is available for testing by corporate users and software vendors. The release, called Test9, can be downloaded at *www.kernel.org* or *ftp.kernel.org*, the Beaverton, Ore.-based nonprofit company said. The 2.6 kernel is being designed to support increased scalability, such as the ability to run Linux on servers with 32 or more CPUs.

EDS Has Q3 Loss, Plans More Cuts . . .

Electronic Data Systems Corp. reported a third-quarter net loss of $600,000 and disclosed plans to cut another 2,500 jobs by the end of next year, in addition to the 2,700 positions it previously had said would be eliminated. The expanded cutback will reduce the Plano, Texas-based company's 135,000-person workforce by 4%. EDS said revenue totaled $5.24 billion in the third quarter, up 6% year-over-year.

. . . And Restates First-Half Results

In addition, EDS lowered its results for the first half of the year after adopting new accounting rules that require companies to change the way they book revenue from long-term contracts. EDS added a $2.24 billion charge to its first-quarter results and said it will now book most contract revenue as payments are received from customers.

Short Takes

EQUINIX INC. in Foster City, Calif., said it's subleasing a Web-hosting data center in Santa Clara, Calif., from SPRINT CORP., which is exiting the hosting business [QuickLink 39162]. . . . MICROSOFT CORP. has agreed to settle antitrust-related class-action lawsuits filed in five states plus the District of Columbia.

Continued from page 1

Shippers

sector will have to pay for most of the upgrades to shipping containers and networks that will enable officials to know if and when sensitive cargo has been tampered with. And some said it's possible to make the new security requirements pay for themselves.

That argument will be presented this week to the U.S. Department of Homeland Security in a report by the Strategic Council on Security Technology (SCST), an independent industry group of port operators, shipping companies and IT vendors.

Computerworld obtained an advance copy of the report, titled "Smart and Secure Tradelanes," which shows that the financial benefits to shippers of a fully automated cargo management and security system would exceed the total systems cost per shipping container.

The SCST conducted an eight-month test that involved a mix of commercial IT tools, including Web-based management software, wireless technologies, electronic container seals, radio frequency identification (RFID) tags and existing ERP software. Sixty-five companies processing 818 containers across three continents demonstrated potential net savings to shippers of $378 to $462 per container per shipment. More than 6 million containers enter the U.S. every year.

The test, which ended in June, also showed that shippers can "potentially derive both direct and indirect logistics efficiencies," the report concludes.

Correction

A story that was part of the Salary Survey 2003 feature in our Oct. 27 issue ("Boost Your Chances of Getting a Raise") incorrectly identified Katherine Spencer Lee's employer as RHI Consulting. The Menlo Park, Calif.-based company has changed its name to Robert Half Technology.

Potential Operational Savings to Shippers

AREA OF SAVINGS	SAVINGS AS A PERCENTAGE OF CONTAINER VALUE*	POTENTIAL CONTAINER SAVINGS
Administrative labor	0.04%-0.05%	$31-$38
Reduction of service charges	0.08%-0.10%	$56-$68
Reduction of pilferage, inspections, loss	0.04%-0.05%	$28-$34
Reduction in safety stock	0.25%-0.30%	$173-$211
Reduction in pipeline inventory	0.13%-0.16%	$91-$111
TOTAL	0.54%-0.66%	$379-$462

SOURCE: THE STRATEGIC COUNCIL ON SECURITY TECHNOLOGY

NOTE: Savings don't include potential reduction in transportation costs.
* Based on an average container cargo value of $70,000.

"The real-time security automation functionality gives shippers the flexibility to decrease inventory safety stocks, increase customer service levels, or both. We believe the incremental security and efficiency benefits to these supply chain constituencies and to society overall are significant."

Security Tools Desired

One improvement that would benefit both shippers and their customers, such as large retail outlets, is the ability to leverage new security-tracking tools and networks to detect routing changes and estimated arrival times, according to the report.

"The combination of RFID infrastructure and software tests identified that 5% of the correctly registered and tracked containers deviate significantly from their assigned routing," the report states. In total, 35 containers had vessel, scheduling or routing data that differed drastically from reality.

Steve Lambright, vice president of technology marketing at Savi Technology Inc. in Sunnyvale, Calif., and one of the authors of the SCST report, said the study included a test of the current manual processes used to monitor the integrity of mechanical container seals throughout various points in the shipping process. According to Lambright, in 60% of cases, the shipper didn't receive any reports on the integrity of the container seals.

In addition, in the 40% of cases where the status of container seals was reported, the serial number of the container was wrong more than half the time. In a follow-up test of three containers that involved deliberately broken security seals, only one container was reported as being opened, but with the wrong serial number.

Douglas Browning, deputy commissioner of the U.S. Bureau of Customs and Border Protection at the DHS, said the cost of upgrading shipping containers with new electronic capabilities and of developing new containers and infrastructures from scratch pales in comparison to the cost of allowing a single terrorist attack to take place at a U.S. port.

Given the real-time nature of the U.S. economy, the total losses from an attack against the port of Los Angeles, for example, "would be catastrophic," said Browning, noting that most of the country's trade routes would be closed down as a result.

"I know these figures appear to be astronomical," he said, referring to the UN cost estimate. "However, they represent one-tenth of the total [value] of the cargo that transits the port of Los Angeles on an annual basis."

During a presentation on cost sharing by Michael Conners, an analyst at Booz Allen Hamilton Inc. in McLean, Va., an attendee criticized the antisecurity lobbying efforts of large retailers reluctant to pay higher prices for their inventories. Wal-Mart Stores Inc. was cited as one example.

"Wal-Mart speaks loudly," said Conners. Bentonville, Ark.-based Wal-Mart didn't respond to *Computerworld*'s request for comments. 42509

'Smart' Containers Coming This Month

NEW YORK

As part of the Department of Homeland Security's Container Security Initiative (CSI), a group of shipping companies later this month will begin using new "smart" containers equipped with high-tech devices that will enable officials to determine if cargo has been tampered with prior to entering a U.S. port.

Although cargo shipments destined for U.S. ports won't be required to use the new containers, the federal government has kick-started an effort to encourage greater use of the technologies by private transportation companies, said Douglas Browning, deputy commissioner for the Bureau of Customs and Border Protection (CBP) at the DHS.

In addition, as part of the CSI program, the top 19 ports outside the U.S. have agreed to inspect outbound containers before departure. Browning said plans call for a total of 47 ports to be taking part in the program by this time next year.

Browning also said the 24-hour advanced electronic manifest reporting rule that the U.S. put into place last December has been working well. "We've received more than 7 million bills of lading, and of those, we have only had to issue 600 denials of lading," said Browning.

The CBP has also proposed a rule that would require electronic notification in advance of changes to cargo before it can enter the U.S., Browning said. "The advance collection of this data directly impacts our ability to keep terrorists and the implements of terror from crossing our border," he noted.

– Dan Verton

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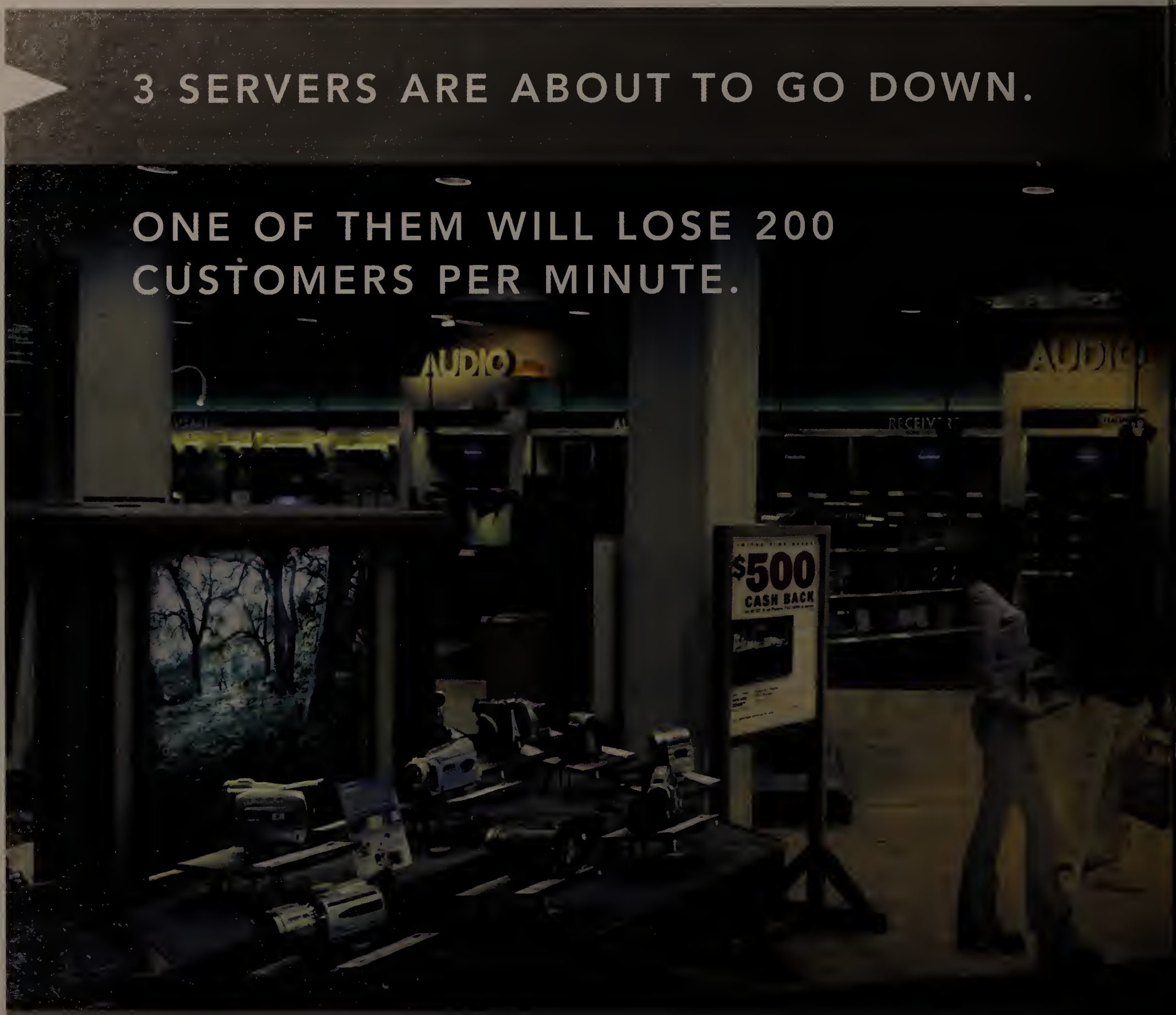

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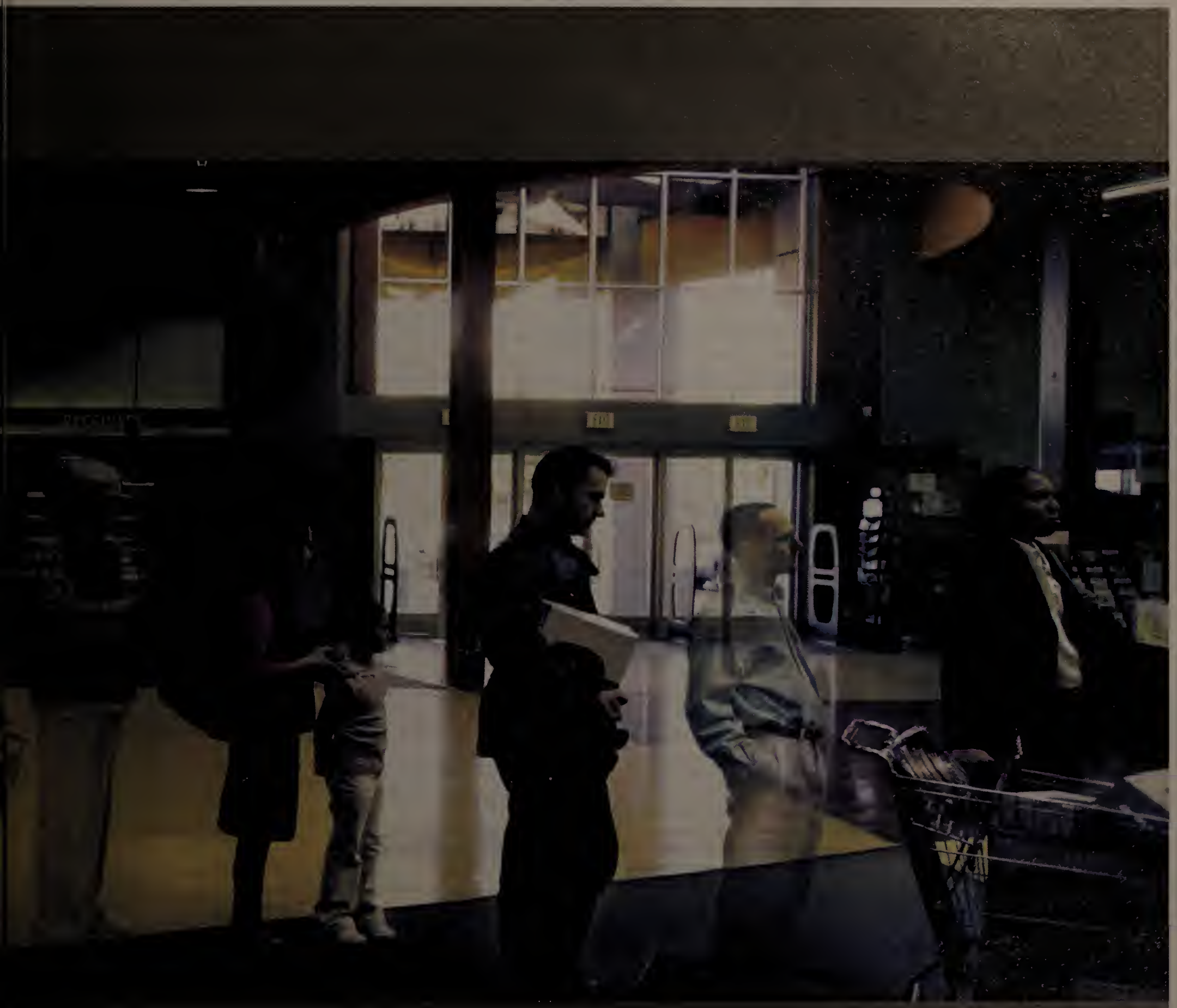

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MARYFRAN JOHNSON

Privacy Rules: Y3k?

"CITING PRIVACY LAW, Senators Seek Probe of JetBlue," read the headline on our Web site [QuickLink 42295], referring to the airline's legal and publicity problems after handing personal information on some 5 million passengers over to a Pentagon contractor.

Now substitute your company's name for JetBlue.

On a visceral level, you just got the core sales pitch behind the wave of products rolling across the privacy frontier. Risk avoidance of the most serious business kind — the kind that impacts customer relationships and business reputations forevermore. That's also why the biggest driver of IT spending in 2004 is likely to be compliance with the daunting list of new laws and regulations affecting data privacy, protection and management.

MARYFRAN JOHNSON is editor in chief of *Computerworld*. You can contact her at **maryfran_johnson@computerworld.com.**

"Privacy is no longer just about the right way of doing things; it is also the legal way of doing things," says Michelle Boggess, electronic data security coordinator at Baptist Health Care in Florida. She's quoted in our "Keeping Secrets" story on page 25 [QuickLink 42105] about the array of products for monitoring and enforcing privacy regulations.

And quite an array it's becoming.

Privacy products are lining up to compete in this regulatory whack-a-mole game. Some are created expressly for the compliance niche; some are being "repurposed" from their original roles as spam filters or quality assurance or Web site management tools. Almost any product with a data management or monitoring spin will take a turn as a privacy or regulatory compliance "solution."

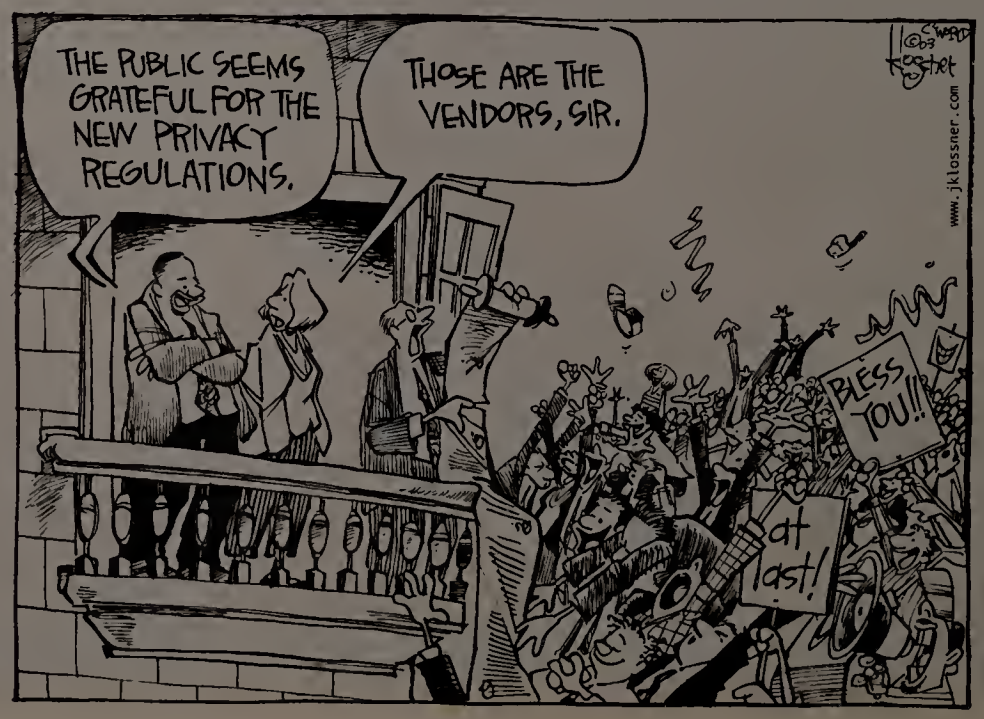
IBM last week joined the fray with a bundled offering of hardware, software and services. The requisite analyst cooing over the announcement made note of the comprehensive, integrated nature of the products. Not so coincidentally, IBM's emphasis on the automated processes these products enable fits neatly into its overall "on-demand" computing strategy. But IBM has grander intentions than selling compliance software. The real message is for companies to leverage this compliance mandate and retool entire IT systems and business processes.

Sounds familiar, doesn't it? That same message sold a lot of ERP systems in the late '90s, and that echo isn't lost on senior IT managers. Some have nervously dubbed this round "Y3k," although nobody can wait till the end of this millennium to solve the problem. IT executives are also mindful that corporate hindsight wasn't kind to the overspending that Y2k code fixes involved. Combined with the subsequent excesses of the dot-com era, IT was left (unfairly, perhaps) with a significant credibility gap on the business side.

So here we are with another business crisis looming, and IT the reluctant savior. But this is clearly a leadership moment, a chance for IT to regain credibility with CFOs and CEOs. What makes Y3k different from Y2k? I think it's the level of business understanding of what's at stake. This time, unlike some geeky code fix, it's about legal penalties, customer losses and company reputations.

But IT leaders need to get in this game, especially now that the products are proliferating. Be front and center with advice for CFOs, auditors, risk managers and compliance officers. Only IT can evaluate the technologies vendors are throwing at the compliance problem. Only IT can enable the kind of business process integration that needs to happen.

Most important, only IT can ensure that Y3k doesn't become future shorthand for another technology overspending hangover. **42471**



PIMM FOX

Squeegee IT Grows Up

IT ISN'T GLAMOROUS, but it works.

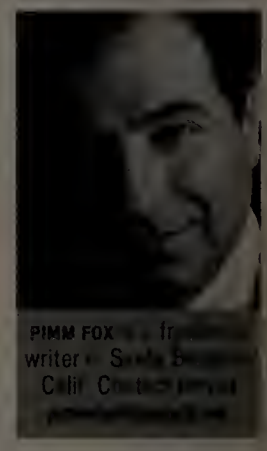
That's what I think of screen-scraping technology.

But I didn't always feel that way. The transition from constrained green-screen legacy systems to sleek Web-based formats replete with Java scripts and XML messaging seemed too much to handle for plebeian scraping technology.

Then I learned about how Indiana Farm Bureau Inc. (*www.infarmbureau.com*) used technology from Israel-based Jacada Ltd. to transform multiple screen presentations into a simplified, easier-to-comprehend graphical layer.

The Indianapolis-based insurance operation didn't want to spend lots of money, because CIO Greg Clancy felt that the Computer Sciences Corp. program running on its IBM AS400 host was perfectly adequate.

"In a lot of legacy systems, you have all you need to perform. The functionality exists," he says. "You just want to shield users from the system's quirks."



PIMM FOX is a freelance writer in Santa Barbara, Calif. Contact him at pimmfox@cox.net.

Those quirks included wonders of past computing like entering multiple codes just to access different functions, such as getting insurance quotes from the application. Training users on the 20-year-old system typically took weeks, another issue Clancy wanted to address.

I confess to being dubious about wrapping technology around technology, because I think it retards functionality, particularly when it comes to security. But Goutam Kundu, director of technology at Indiana Farm Bureau, says all transactions coming from the back end pass through the Jacada server, use 128-bit encryption in the form of a cookie, and afford users one place to log on for the entire application. He also says the new graphical user interface has enhanced user productivity.

Developed completely in Java with open-ended modules so you can tack on your own Java code, Jacada's tools have drop-down windows to make it

easier for developers to make changes. In addition, the new presentation layer is deployed via the Web using the company's intranet, opening up the possibility of integrating other XML-friendly applications.

And since members of the field sales force were already using a PC application, they needed very little training to move from the 25-screen CICS application to the GUI with just two screens. The 450 agents in 131 offices now train using self-directed education along with a short orientation course.

Not every adaptation is going to be completed in six months, nor will every GUI obviate fiddling with the business logic. I still think there are instances where remapping and refitting legacy applications isn't going to be accomplished by seamless, low-cost Java tools.

But if what you're after is bridge technology to extend vendor packages that you plan to use for many years — without big modifications — then go on, scrape away. **42397**

THORNTON A. MAY

Organize for Innovation

ORGANIZATIONAL restructuring is one of the most frequently used tools at an IT leader's fingertips. Sadly, most reorganization efforts fail to significantly improve a department's performance. The search continues for IT organizational structures that are able to do a better job delivering the full value inherent in the department's powerful technologies.

In workshops I recently conducted at the Cisco CIO Summit and the inaugural meeting of the Executive 10 of Oregon (the CIOs of the 10 largest organizations in the rain state), deep-thinking IT leaders grappled with how they might better structure their IT shops. We focused on three issues:

- What is driving IT organizational change?
- What is wrong with the current structure?
- What are some principles for designing effective IT shops?

And here's what we learned. Organizational change is driven by a combination of these five stimuli:

- New guy/new strategy — a new C-level executive shows up and starts rearranging the furniture.
- A catastrophic faux pas — something goes terribly wrong and the enterprise responds structurally to fix it.
- Merger/acquisition/industry consolidation.
- Regulatory requirements.
- Mind-set change — somebody high up in the organization believes there is a more rational way to organize IT resources.

THORNTON A. MAY is a longtime industry observer, management consultant and commentator. Contact him at **thorntonamay@aol.com**.

Our industry bulges with examples of IT reorgs gone wrong. At the Center for Advancing Business Through Information Technology, we're examining the structural pathologies that get in the way of IT reorganizations being successful. The biggest reason IT restructurings fail is that they don't address the entire technology life cycle. Full-circle IT involves the following nine critical steps:

1. Conceiving an opportunity: What do we want technology to do for us?

2. Contextualizing IT opportunities: Examine IT projects in the context of organizational mission and resources and compare them against other projects.

3. Simulating: What will our workplace be like when the project is done? How will workplace behaviors change?

4. Choosing: The process whereby executives allocate IT resources.

5. Designing: The blueprint of what the system will deliver and how the system will work.

6. Building: Moving from drawing board to desktop.

7. Deploying: Getting the technology into the workplace.

8. Operating/maintaining: Making sure it works.

9. Retiring: Making sure that technology that's no longer relevant or no longer optimal is removed.

Survivors of failed IT reorganizations group their lessons into three buckets: innovation, operation/optimization and collaboration. The ability to balance optimization with innovation in every major work process in the enterprise is the sought-for, seldom-achieved goal. For example, airlines have achieved Six Sigma standardization regarding in-air safety but only Two Sigma efficiency for baggage handling.

Most IT organizations structure themselves to give users exactly what they want (that is, they are highly collaborative) at the expense of operational efficiency; undertake experiments at the expense of operational efficiency; or dramatically restrict technology choices and operate highly efficient IT shops at the expense of innovation and collaboration.

According to the best IT shops, you should instead organize to gain control over the IT supply chain. For example, use access to the network as a behavioral modifier to make sure that business units can't do mood-based technology procurement. In that way, off-the-reservation technology doesn't get on the corporate network. However, you must create a visible process for business units to obtain exceptions to enterprise standards.

Finally, you need to formalize the structure for innovation and reward innovative technology ideas emerging from business units. **42405**

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READERS' LETTERS

Insightful Look at IT/User Interaction

PAUL GLEN'S Oct. 6 column ["Stop 'Gathering' IT Requirements," QuickLink 41565] nailed the situation on the head. In my experience, getting the proper understanding between users and technicians is the Achilles' heel of today's business environment. The technicians prefer the path of least resistance: take a few notes and go off to reinterpret reality according to what's convenient and exciting for them. The users, certain that they're about to be drowned in technical terms and abstractions, would rather be anywhere else.

As a consultant, I've had the good fortune to learn some great techniques. As the session unfolds, everyone begins to see that: 1) nobody really has a firm, clear definition of the business data and how it interrelates; and 2) getting that firm, clear definition is a lot of hard work. I've had sessions where participants who came expecting to be bored to tears departed wrung out from the rigors of being forced to think about their data reality to a depth they had never had to before. (I compare it to taking an SAT test every day for three solid days.)

Every technician should read Paul's column, and those responsible for interacting with users should frame it. Thanks to *Computerworld* for publishing this insightful piece. Perhaps if more of us keep sounding this horn, eventually the industry will listen.

Roger B. Thomas
Principal, JCK, Port Huron, Mich., roger@jckconsulting.com

Long-term Goals Must Drive Budgets

SHAME ON CIOs and CxOs who permit security managers to scare them into budget changes ["Scare Tactics No Longer Guarantee Security Funding," QuickLink 42025]. In good times and bad, poor management results in lost dollars and opportunities. More security for privacy and record-keeping means the focus on the bottom line needs to be sharpened.

Changes within the organization are always an opportunity to improve performance and reach goals, but senior managers must keep their eyes on the several balls they've decided to juggle. Allowing daily events like the latest security problem to drive budgets and strategic goals is like going outside the house to swat flies. A security manager should go back to the security policy and, after checking for consideration of regulatory requirements, make sure the policy ultimately drives budget requests.

Dave Kendall-Sperry
President, K&S Services, Dublin, Ohio, DaKendall@Columbus.RR.com

Grid Article Didn't Go Deep Enough

ALTHOUGH I FIND Gary H. Anthes' article "Grids Extend Reach" [QuickLink 41610] very interesting, it is also very narrow in scope. It focuses only on the application layer. The grid addresses other layers of the IT infrastructure as well, such as the pooling and sharing of resources at the storage, database server and application server levels. And contrary to the article, most commercial applications don't need to be rewritten to take advantage of many aspects of grid technology being pioneered by Oracle Corp. in Oracle 10g (now in beta testing).

R. David Peterson
Senior technology consultant, Los Angeles, RDavidPeterson@Yahoo.com

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QUICK STUDY

WebDAV

Web-based Distributed Authoring and Versioning is a standardized set of extensions to HTTP 1.1 that allows users to collaborate over the Internet by editing and managing files remotely. **Page 34**

SECURITY MANAGER'S JOURNAL

Rogue Access Point Leads to Embarrassment

Mathias Thurman must identify the location of a rogue access point after an outside vendor discovers its presence and gets into the corporate LAN. **Page 36**

QUOTE OF THE WEEK

"As microcomputers acquired mainframe power, tens of millions of amateurs got hold of the capacity to mess up systems in ways that previously were available only to professional programmers."

– From Paul A. Strassmann's column, page 38

KEEPING SECRETS

Vendors are rushing an assortment of products to market that monitor and enforce compliance with privacy regulations. BY JAIKUMAR VIJAYAN

AS THE INFORMATION SYSTEMS security manager at Community Health Network in Indianapolis, a major part of David McLain's job is to ensure that employees are adhering to the requirements of the Health Insurance Portability and Accountability Act (HIPAA).

That means making sure that protected patient health information isn't transmitted in a noncompliant manner within or outside of the hospital system's networks.

To monitor, audit and enforce compliance, McLain uses an automated tool called VIEW for Privacy Protection, a content monitoring product from Vericept Corp. in Englewood, Colo. VIEW, which stands for Vericept Intelligent Early Warning, uses hardware devices to sniff out and document e-mail, instant messages, chat sessions and peer-to-peer or file-sharing sessions that violate privacy rules on Community Health's networks. For instance, all communication of unencrypted patient information, such as account numbers, medical information or payment history, is automatically flagged and stored for later review and action.

Such automated capabilities are crucial to Community Health's ability to stay on top of its HIPAA obligations. "Without a product like this, we wouldn't have been able to see what was going on in our networks," McLain says.

Regulatory Push

VIEW is one of a growing number of products that are being offered up as automated tools for monitoring and auditing privacy compliance.

Vendors of such products hope to tap into concerns about liability issues, such as the need to comply with a growing number of privacy regulations, says Pete Lindstrom, an analyst at Spire Security LLC in Malvern, Pa.

POLLY BECKER

KEEPING SECRETS

Continued from page 25

Some of the privacy regulations are industry-specific, such as HIPAA's mandates for health care organizations and the Gramm-Leach-Bliley Act's requirements for financial services companies. But others cut across industries, including Europe's data privacy regulations and California's Security Breach Notification Act, which requires companies to inform customers of security breaches that compromise some types of personal data.

"Privacy is no longer just about the right way of doing things; it is also the legal way of doing things," says Michelle Boggess, electronic data security coordinator at Baptist Health Care's compliance office in Pensacola, Fla.

Many vendors have responded with compliance monitoring and enforcement products. "Everyone in the security space wants to take some credit for addressing privacy issues," Lindstrom says.

It's important to remember, however, that most of the tools are still evolving and remain largely untested in enterprise environments, says Roger Brown, an IT auditor at Jefferson Health System, a $2 billion health care organization in Radnor, Pa. Organizations need to first have good processes and policies in place for such tools to be effective, he says.

But implemented properly, such automated tools can deliver far better efficiencies than manual compliance checks, which are "destined for failure," Lindstrom says.

The Pure Plays

Most tools fall into one of two categories: products developed specifically to address privacy compliance; and repurposed products, such as spam-filtering software, that now focus on privacy issues.

Several vendors offer tools with privacy compliance as the core function.

IBM's Tivoli Privacy Manager for e-business technology is one example. The product, which works with AIX, Solaris and Windows 2000 systems, is designed to monitor and enforce compliance at the transaction and application levels, says product manager Steve Adler.

A company can use Tivoli Privacy Manager to convert a written privacy policy into digital form and use those policies to control the manner in which applications and users access sensitive data. It gives companies a way to centrally create, edit, manage and audit policies that dictate which sensitive information is accessed, by whom it is accessed, the purpose for which it is accessed, and how it is shared, stored and eventually destroyed, Adler says.

Other examples of privacy-specific products include WebXM software from Watchfire Corp., Vontu Protect from Vontu Inc. and Liquid Machines from Liquid Machines Inc.

Waltham, Mass.-based Watchfire is selling its privacy tool as a component of a wider Web site management and quality assurance tool. WebXM can be used to scan Web sites for information collection practices, links to privacy policies, user-tracking practices and Web page security practices that affect privacy.

San Francisco-based Vontu's product, meanwhile, is targeted at insider threats and allows companies to monitor their networks for transmission of confidential customer or employee information, says Doug Camplejohn, a company vice president.

Lexington, Mass.-based Liquid Machine's product is aimed at helping companies protect sensitive documents and data by controlling who gets access as well as where, when and how access is granted, according to CEO Jim Schoonmaker.

The Converts

Ottawa-based Coast Software Inc. is one vendor that has repurposed its product for privacy compliance. Coast's Web Quality Central software, originally developed as a quality testing tool for Web sites, is now marketed as a tool for monitoring privacy compliance.

Go Jobs Inc., a Newport Beach, Calif.-based online job-posting site, uses Coast's Web Quality Central to monitor Web site content and functions. The software periodically scans Go Jobs' 50,000 Web pages, searching for privacy issues such as pages missing a P3P privacy policy, pages with links containing personal information and pages with potentially dangerous data leaks.

The reports generated give Go Jobs a detailed overview of the company's privacy compliance, as well as Web site accessibility and operational security standards, says Jonathan Duarte, president of the online job board.

"Privacy is a primary concern for us," Duarte says. With about 7,000 visitors to the site daily, any compromise of personal information "could put us in a world of financial hurt. Coast's software is our insurance policy," he says.

Likewise, Alpharetta, Ga.-based CipherTrust Inc. is repositioning its IronMail antispam and antivirus product as a tool for controlling the use of encrypted e-mail at companies in industries affected by HIPAA or Gramm-Leach-Bliley.

Baptist Health is using IronMail's policy manager to scan each incoming and outgoing message on the hospital system's networks for specific words, phrases or attachments. It can intercept and hold any e-mail containing protected patient information. Administrators can then let the message pass through to the recipient or block it.

"IronMail has helped us to identify users in the hospital who are relaying patient information to people outside of the corporation [without adequate safeguards]. Before, we didn't have a way to grab that information," says Boggess.

Vendors of content protection software such as Waltham, Mass.-based Authentica Inc., Boston-based Sealed-Media Inc., and Palo Alto, Calif.-based PSS Systems Inc. are also rushing privacy compliance products to market, says Joshua Duhl, an analyst at Framingham, Mass.-based IDC.

Such products focus on postdelivery protection of documents and Web content via encryption and the enforcement of policies related to how the data is to be accessed, stored, copied or printed.

"Compliance is probably the best opportunity that these vendors have had to provide value with their products," Duhl says. "All of the digital rights management vendors have some sort of story around compliance, whether it be the fact that they are doing encryption of the data or making sure there is no leakage of information." **QuickLink 42105**

PRODUCT ROUNDUP

Check out this sampling of vendors offering privacy compliance monitoring tools:

QuickLink 42102
www.computerworld.com

A TOOL FOR EVERY NEED

Many vendors offer privacy compliance tools, but each product addresses a different area of compliance.

WEB WATCHERS

These products let administrators scan Web pages for P3P privacy policies, cookies and Web beacons used for tracking users; information collection practices; and links to other sites that could compromise privacy. Watchfire and Coast Software, for instance, aim to help companies monitor Web site content and activity for privacy compliance.

TRAFFIC MONITORS

Others vendors, such as Vericept and start-up Vontu, offer network content tracking products. Vericept's VIEW for Privacy Protection, for instance, uses linguistic and mathematical analysis to scan the network for content – such as primary health information or employee data – that doesn't comply with an organization's privacy policies or security boundaries, says product manager Roger Brown. The noncompliant data is logged, copied and reported. Vontu's product is designed more to prevent insider abuse and looks for specific pieces of proprietary information leaving the organization by e-mail, FTP or chat session, says Doug Camplejohn, a company vice president.

CONTENT CHECKERS

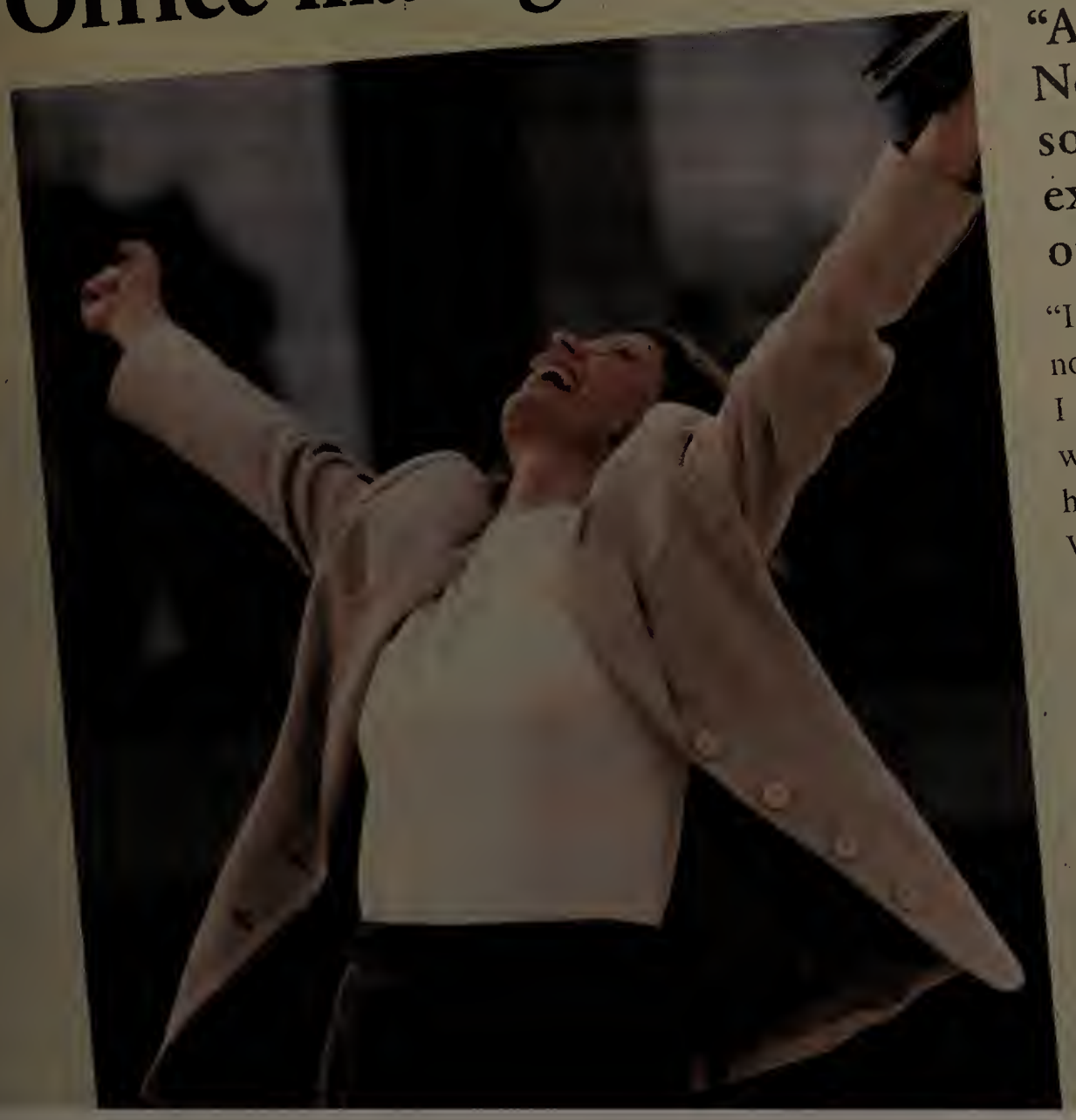
Still other products are designed to protect content. Products from vendors such as Liquid Machines and Authentica allow companies to enforce privacy policies at the content level. The tools enable companies to allow or prevent actions such as reading, altering, copying and printing data based on a user's privileges for that document.

TRANSACTION TRACKING

One of the crucial differentiators in IBM's Tivoli Privacy Manager technology is its focus on real-time privacy enforcement. The middleware product uses privacy policies to control real-time access to database information from the application layer. With it, companies are able to enforce and audit policies related to how and when critical data can be accessed and used.

TEN TIMES

Office manager escapes clutches of desk



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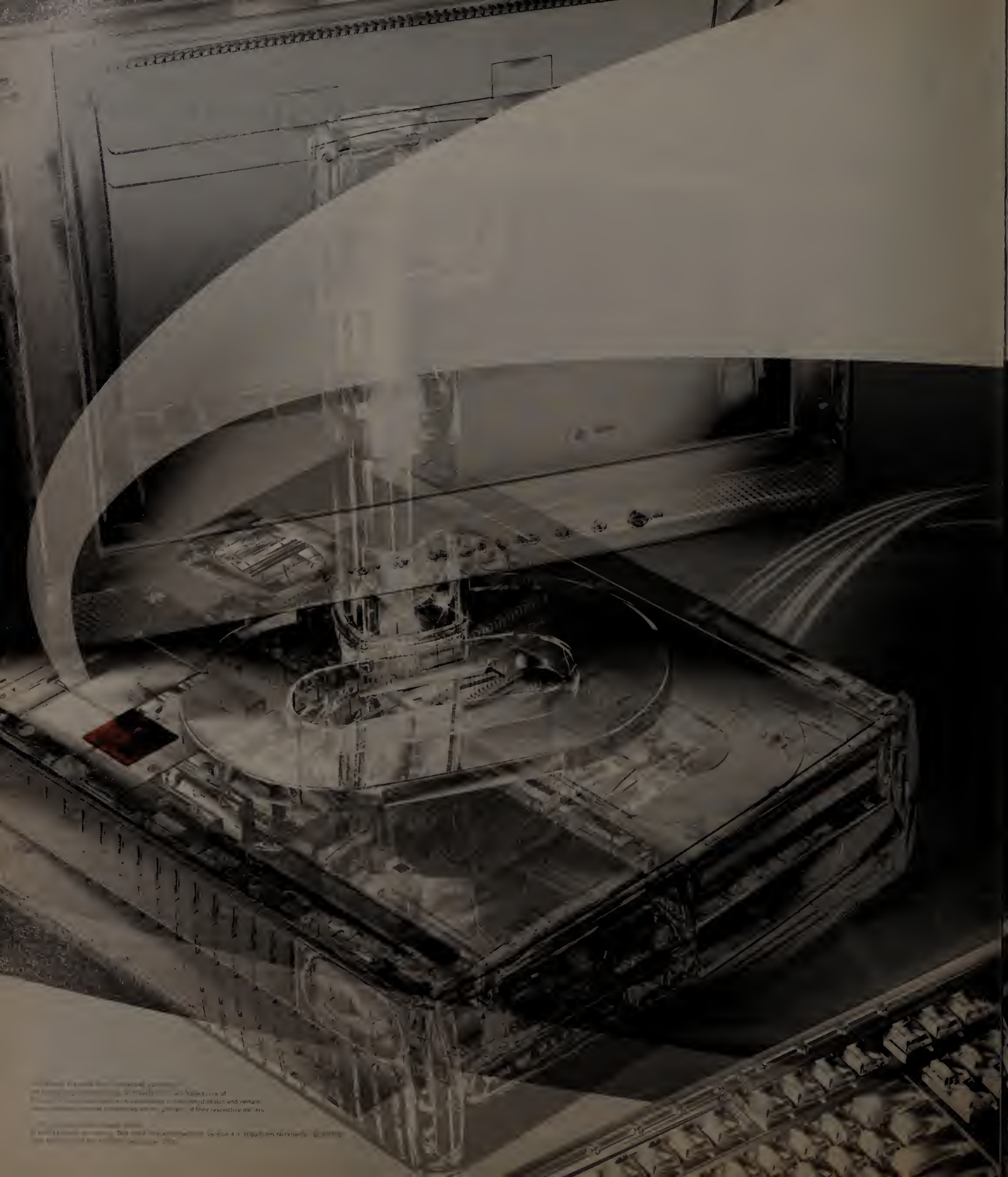

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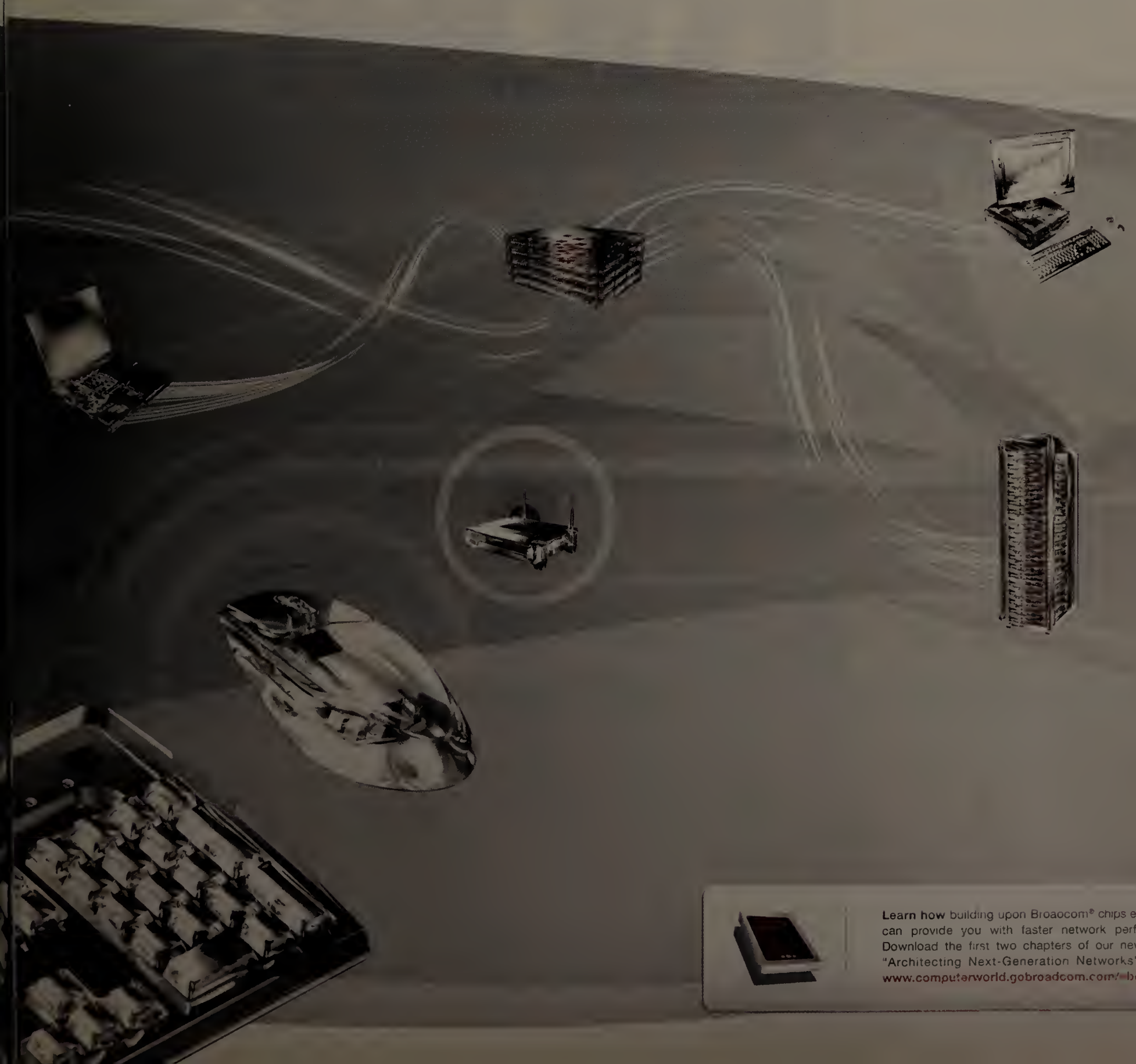

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Early Riders

Although the technology is still being developed, some companies are already using an enterprise service bus to solve problems and save money. By Connie Winkler

MYSIA BENFORD'S problem was empty trucks. After delivering animal feed to farmers, trucks from her company, Associated British Nutrition and Agri-products Ltd., returned without a load. On the way back, they often met or passed other trucks picking up products the same farmers were selling to ABNA.

The fact that ABNA's customers were also sometimes its suppliers created an opportunity to eliminate some of those 2,000 daily trips, streamline supply chain operations and reduce the $100 million annually spent on logistics. "If you can minimize empty running, you can take costs out — that was one of the main drivers for this," says Benford, group information systems and logistics director at ABNA in Peterborough, England.

The challenge was how to integrate a logistics optimization system with ABNA's customer, accounting, trading and business systems (some from acquisitions), running under Unix, Hewlett-Packard Co.'s OpenVMS and Microsoft Corp.'s Windows NT. Because users liked these best-of-breed applications, Benford rejected installing a monolithic ERP system.

She took what she judged to be a simpler, cheaper route: a bus architecture using messaging routers to connect those major systems and enable them to share information — an integration technology now called the enterprise service bus (ESB). "The messaging approach seemed to be the best solution ... and it didn't cost a fortune," says Benford, who worked with Sonic Software Corp. on the ESB.

ABNA and other early adopters of the ESB approach, such as General American Corp. and Central Hudson Gas & Electric Corp., are seeking the following benefits:

- **Interoperability** — the ability to interconnect applications and systems across messaging platforms and operating systems.
- **Lower costs:** What in the past might have been multimillion-dollar integration projects can cost one-fourth to one-third as much as they once did.
- **Simpler development models** that rely on standards and are suited to generalist developers.
- **Services-oriented architecture,** which can harness Web services capabilities.

Turning to integration to streamline operations and save money is nothing new, but today's tightened IT budgets have pushed the trend, says Steve Craggs, a consultant at Saint Consulting Ltd. in Hampshire, England, who is vice chairman of the EAI Industry Consortium in Calgary, Alberta. What's new is the messaging technology approach and its ability to retain 80% of the power of existing enterprise application integration (EAI) system and add increased capabilities at a comparatively low cost.

"What's really tipped the ESB is the emergence of stronger standards, especially for XML, JMS and Web services," says Roy Schulte, an analyst at Gartner Inc. in Stamford, Conn., and the originator of the ESB designation. Improvements in publish-and-subscribe technology and middleware as well as faster networks have boosted real-time connectivity across heterogeneous environments, but it has taken the ESB approach to bring together what Schulte calls the "enterprise nervous system." He predicts that "a majority of large enterprises will have an enterprise bus running by 2005."

"Companies need deeper integration beyond Web services and XML," says Eric Newcomer, chief technology officer at Dublin-based Iona Technologies PLC, which is moving toward an ESB model. "They've built up different middleware using CORBA, application servers, Microsoft .Net and IBM products such as [WebSphere MQ] — but none of it talks to the other."

Other organizations are using ESBs to extend integration to other departments or functions. "Having mission-critical applications on EAI doesn't stop them from the cheaper ESB approach," adds Craggs.

Generally speaking, an ESB is a modular middleware layer passing data between applications and systems via a bus (or ring) architecture that has a core asynchronous messaging backbone with intelligent transformation and routing for reliability. This contrasts with the traditional hub-and-spokes integration model with passive nodes and intelligent hubs. The ESB depends upon standards-based technologies — typically, but not always, Java Message Service (JMS), Java 2 Enterprise Edition (J2EE) connectors and/or XML document exchange capability.

Services deployed at each application plug into the bus via standards-based connections. Applications can be activated from or to anywhere on the bus, without having to go through a central hub. Despite the reliance on standards, however, vendors have chosen different messaging approaches and features in their ESB bundles. To simplify ESB projects, vendors have added development consoles or dashboards using Java and drag-and-drop features.

ESBs are the "next-generation middleware" that will deliver the same level of integration to midsize companies that larger companies have gotten from application servers for years, says Dennis Byron, an analyst at IDC in Framingham, Mass. "What you're seeing is the natural trend: As technology becomes more mature, it provides the same capability at the lower end of the market and at lower price points."

Several ESB suppliers start single-server licenses at $12,500 to $25,000, although major systems cost about $250,000, plus $150,000 for customization. Still, this represents a fraction of the cost of EAI implementations. The hang-up with EAI isn't the purchase price, explains Byron, but the long implementation times needed by pricey consultants. "A $50 million company can't afford $2 million to customize and implement a proprietary solution," he says.

Nor has it hurt that ESBs can be implemented as projects. "Even though customers envision a pervasive integration network across their enterprises, the funding model today is project-based. Customers buy ESB incrementally," says Gordon Van Huizen,

ESB Basics

The following are features that characterize enterprise service bus architecture:

- **Bus-related messaging engines that provide transformation, XML and intelligent routing services, and the communications bus itself**
- **Definition tools and repository services**
- **Administration and management services**
- **Support for standard forms of connectivity, such as Web services**
- **Adherence to industry standards**

SOURCE: STEVE CRAGGS, VICE CHAIRMAN, EAI INDUSTRY CONSORTIUM, "BEST OF BREED ESBs"

CTO at Sonic Software, a Bedford, Mass.-based ESB vendor.

Even for relatively big integration efforts at large companies, ESB is paying off, early users say. For example, ABNA, a $1.95 billion arm of $7.2 billion London-based Associated British Foods PLC, had estimated that its IT integration effort could cut 5% to 10% off a $100 million annual shipping bill; the project has cost about $2.8 million for development, software and hardware. "That's no-brainer ROI," says Benford. "We are proving the technology will work, and we are starting to deliver those savings."

ESB technology has also given ABNA a shipment status notification system in addition to electronic data interchange, and that's important because improved shipment documentation is required as part of the U.K.'s battle against mad cow disease.

Development Simplified

Much of the savings on ESB projects comes from the relative simplicity of ESB development models and tools. "Because we're standards-based, you're writing code to a standard and at the business level," says Ronan Bradley, CEO of Dublin-based PolarLake Ltd., which sells the JIntegrator ESB. "We hide all that [complexity] within the platform."

And since development is simpler, fewer programmers are needed — and they can also be skilled in Java or XML instead of being specialists in proprietary products. "It needs a few people who are highly skilled, but not an army of them — we're seeing [development] teams that are smaller," says Steve Field, practice director of enterprise integration at Tier1 Innovation LLC, a systems integrator in Denver.

In was development hassles that led General American Corp., which provides appraisal and title services for the real estate industry, to consider ESB technology. Whenever one of its thousands of mortgage bank customers requested an electronic link-in, Pittsburgh-based GAC had to shut down its systems, which run a Sybase database and Windows 2000.

"We'd go through this entire project of mapping data fields back and forth, testing, and actually shut down just so we could update our systems to support this new interface," says Chris Behning, senior vice president and CTO at GAC.

Last month, GAC went live with Tifosi Enterprise Integrator from Fiorano Software Inc. in Los Gatos, Calif. After reviewing integration products from IBM, Sybase Inc. and others, GAC decided it liked Tifosi's simplified development model and dashboard for designing and deploying the application. GAC tried a proof-of-concept model before installing the $250,000 Tifosi system companywide. Behning also likes the ESB's Web services capability because GAC can use it to set up a standard way for customers to do their own link-ins in the future.

Any ESB discussion quickly turns to Web services. "ESBs will be the primary implementations of Web services. ESBs are how you are going to get Web services, vs. competing with Web services," Schulte says.

And the ESB marketplace will get busier. "With IBM and Microsoft preparing to offer ESBs, this concept will take off quickly," says Schulte, referring to Microsoft Corp.'s rumored Indigo product and IBM's plans to offer an ESB next year [QuickLink 42341].

IBM executives suggest that their services bus will be a variation of the existing WebSphere MQ messaging platform. Interest in the ESB has also spawned a large handful of suppliers and has existing providers announcing new or recast products.

When Central Hudson Gas & Electric needed ESB-style integration, it chose to work with its vendor of 20 years, Software AG Inc. in Reston, Va. The Poughkeepsie, N.Y.-based utility needed an Internet customer billing and information system and a way to better feed outage reports into a new storm management system from GE Power Systems in Schenectady, N.Y. "Our goal was to improve customer service by providing self-service over the Internet and through an outage management system that predicts the cause of power outages reported by customers," says Central Hudson IT manager Gary Wright.

For Central Hudson, each customer call offloaded to the Internet saves $6 to $7. "Of the 720,000 calls received per year, we estimate 10% can be answered online for a potential savings of $500,00 a year or more," Wright says. "We're not looking to reduce staff; our goal is to reduce costs so we can manage growth without increasing resources."

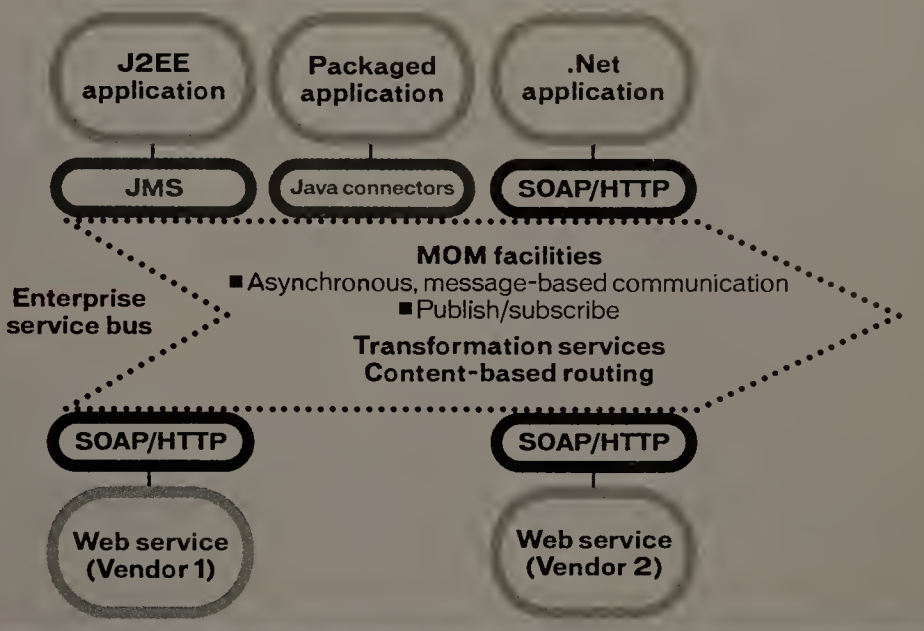
Although Wright considered other integration options, Software AG's EntireX has the messaging communications, and its Tamino product has the XML server capability to connect Web documents. Software AG has long had adaptable messaging and integration, but now its technology matches the ESB buzzword, says Joe Gentry, the vendor's senior director of product marketing.

Customers don't call to buy an ESB: "They call and describe a challenge — to send information from multiple back-end systems to business partners, or they want to provide a Web interface combining data from multiple sources or that enables customers to manage their accounts," Gentry says. "Right now, that's called an ESB." **42253**

Winkler is a freelance writer in Seattle. She can be reached at winklerconnie@yahoo.com.

How The Bus Works

An ESB provides a messaging backbone that extends messaging-oriented middleware (MOM) functionality across all of the services, systems and applications that a company uses.



Products and Vendors

For a technology that touts standards, the ESB offerings from a variety of vendors are far from standard. Gartner analyst Roy Schulte and other industry watchers generally break suppliers into three groups – in addition to existing players, which include EAI suite makers.

Sonic XQ ESB from Sonic Software, Bedford, Mass.
Tifosi ESB from Fiorano Software, Los Gatos, Calif.
JIntegrator from PolarLake, Dublin
SpiritWave from SpiritSoft Ltd., Milford, Mass.
Artix from Iona Technologies, Dublin
WASP suite from Systinet Corp., Cambridge, Mass.
DE Management Server from Digital Evolution Inc., Santa Monica, Calif.

Composite Application Suite from Kenamea Inc., San Francisco
EntireX from Software AG, Reston, Va.
KnowNow Internet Middleware from KnowNow Inc., Sunnyvale, Calif.

Enterprise Messaging from Tibco Software Inc., Palo Alto, Calif.

Network Director from Blue Titan Software Inc., San Francisco
Cape Clear 4 from Cape Clear Software Inc., Waltham, Mass.

IBM has said it will offer bus technology by next year, probably as an update to its WebSphere MQ messaging platform for a service-oriented architecture.

Microsoft is also expected by analysts to offer ESB functionality in its Web services framework code-named Indigo.

Middleware is Everywhere. Can you see it?

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WebDAV

DEFINITION:

Web-based Distributed Authoring and Versioning (WebDAV) is a standardized, platform-independent set of extensions to HTTP 1.1 that allows users to collaborate over the Internet by editing and managing files remotely.

BY RUSSELL KAY

AS MORE AND MORE enterprises use project teams with members based in different locations and time zones — often in different countries or hemispheres — their need for effective electronic collaboration tools has grown dramatically. There are a number of products that aim to solve that problem, and most make at least some use of a single underlying technology.

Web-based Distributed Authoring and Versioning (WebDAV or, more often, just plain DAV) is a standard that extends the capabilities of HTTP 1.1, the underpinning of the World Wide Web.

HTTP lets users read content that has already been published on the Web, but it provides no simple way for users to post new content or edit existing Web documents.

The protocol has no standard method for moving a file, locking or unlocking it, or adding property information to the file. WebDAV standardizes all of those functions, making the Web writable as well as readable in an interoperable way.

WebDAV was first proposed in 1996, and the current standard, RFC 2518, was published by the Internet Engineering Task Force (IETF) in February 1999. Versioning extensions to WebDAV were codified in RFC 3523 in March 2002.

Diving into DAV

WebDAV extends HTTP by adding new functions, including the following:

- **Delete:** for deleting a document or other resource.
- **PropFind and PropPatch:** for reading and writing metadata (also called properties) for a resource.
- **MkCol:** for creating a new DAV collection (think of folders for organizing files).
- **Copy and Move:** for copying or moving a resource.
- **Lock and UnLock:** for protecting editing changes when multiple users access the same document.
- **CheckOut and CheckIn:** for enabling version control and revision tracking.

HTTP headers aren't long enough to handle some requests, so WebDAV uses XML to format such requests and to store all resource properties. WebDAV version control also makes it possible for users to know which version of a file is the most current.

WebDAV at Work

Let's say you're collaborating on an engineering project with two or more groups in distant locations. You probably use e-mail to communicate with one another about the project's status, and you send document revisions back and forth, with everyone hanging onto copies.

If you're lucky, your organization has a document management or collaboration system to help keep things organized, as well as a version-control system to help track changes. But what if you don't have those resources?

With WebDAV-compliant software, team members can edit Web documents stored on a common Web server that's accessible on your network and over the Internet (safeguarded as needed by firewalls and virtual private networks) from any member's browser or other software.

A file-locking mechanism prevents one person from accidentally overwriting another's changes when they are working on the document at the same time. And you can limit access rights, store versions for later retrieval and maintain metadata such as authorship and modification dates.

QUICK STUDY

San-Francisco-based Xythos Software Inc. has a content-management product, WebFile Server (WFS), that combines WebDAV and Secure Sockets Layer encryption to allow controlled remote access to unstructured documents. This has been used by a number of health care providers in meeting the requirements of the Health Insurance Portability and Accountability Act.

Users can access documents via WFS, which enforces permissions and provides secure remote access. WFS can also track all views and changes to a specific document and integrates into many desktop applications, including Microsoft Corp.'s Office.

Interoperability

WebDAV has been making strong inroads into Web infrastructure products.

The two leading Web servers — Apache and Microsoft Internet Information Server — are compliant, as are document and content management systems from Documentum Inc., Vignette Corp. and BroadVision Inc.

Other popular software tools that support DAV include Microsoft's Office XP, Office 2003 and SharePoint Portal Server, as well as Macromedia Inc.'s Dreamweaver, and Adobe Systems Inc.'s GoLive and Acrobat.

WebDAV functionality is embedded in operating systems including Windows (from Windows 95 onward), Apple Computer Inc.'s Mac OS X and Novell Inc.'s Netware. Windows XP's integrated support enables any application running on it to be WebDAV-enabled.

DAV's Future

In many organizations, static documents have evolved into active documents and interactive forms over corporate networks. With WebDAV support widely available, Web authoring is also likely to expand from local Web servers and intranets to encompass the entire Web, simply because new software will support seamless collaborative authoring.

The DAV Searching and Locating (DASL) group, which is related to the IETF, is working to develop a way to search a WebDAV-compliant repository on any platform. The DASL technology's main function will be the ability to search for Web resources based on their properties and text content. Another working group is addressing the issue of access control. **42130**

Kay is a Computerworld *contributing writer in Worcester, Mass. You can reach him at russkay@charter.net.*

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WebDAV in Use

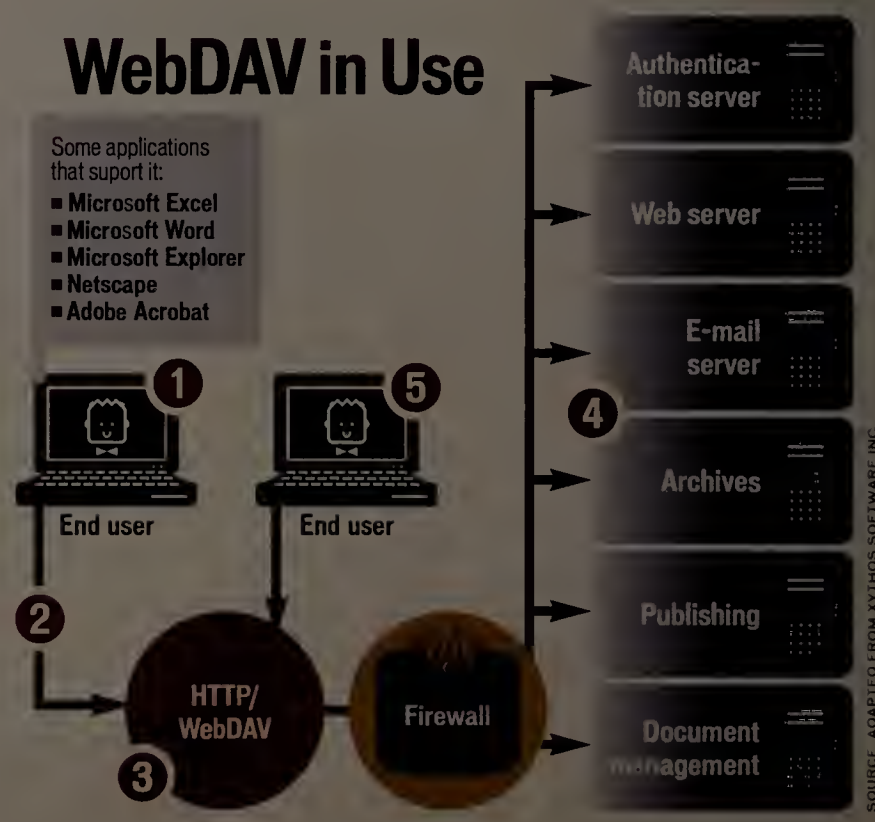
1) User accesses WebDAV file through an application, Web browser or file-management utility.

2) The file can be accessed over any type of network connection - LAN, WAN dial-up, VPN or wireless LAN, for example.

3) Security is achieved using Secure Sockets Layer or VPN encryption.

4) Servers enforce permissions and respond to requests to, for example, open and edit files, browse the directory or create, rename, delete or copy files.

5) Multiple users can access and edit the same file securely and concurrently.



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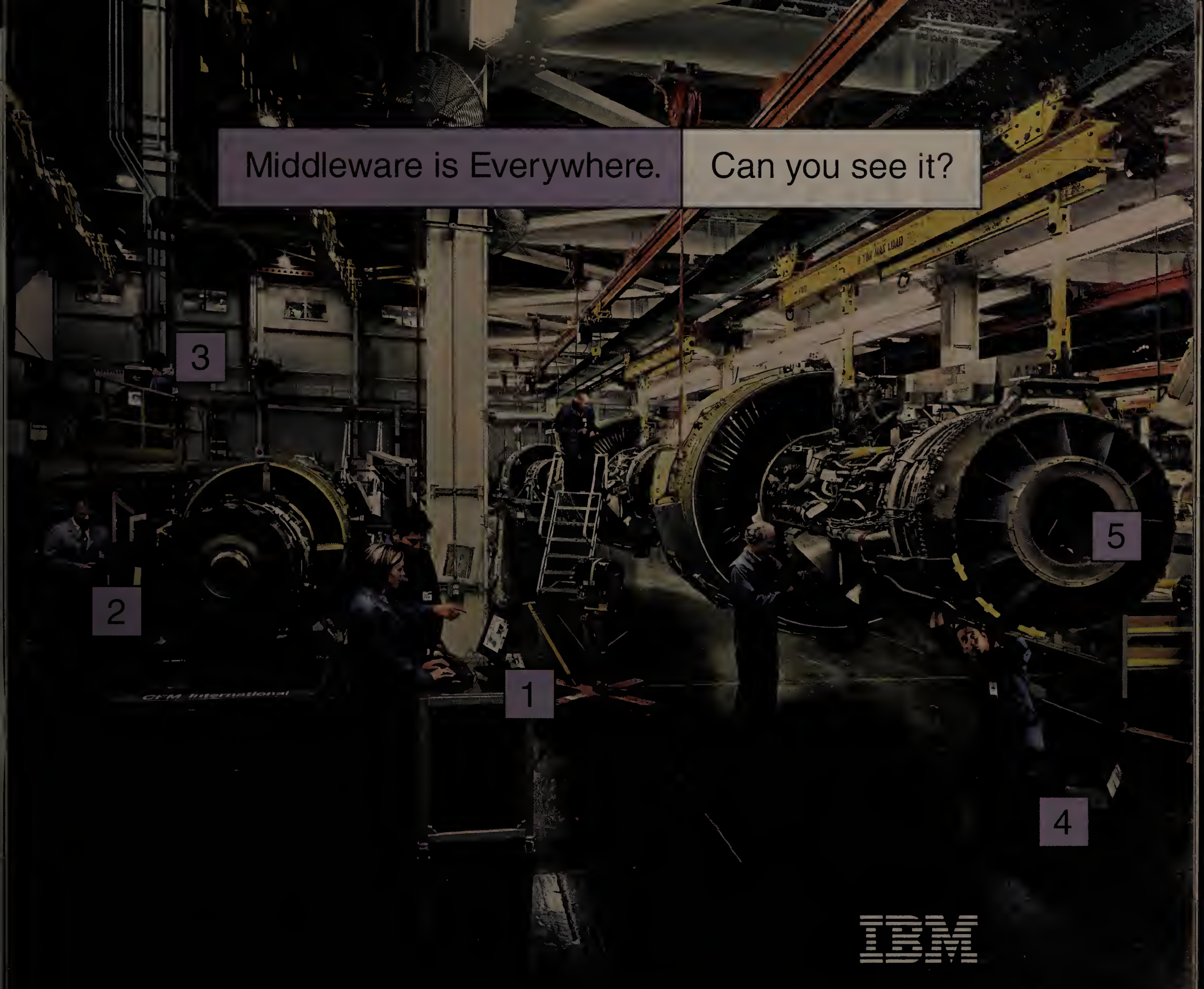

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Rogue Access Point Leads to Embarrassment

An unauthorized and undetected wireless access point lets a visitor into the corporate LAN. By Mathias Thurman

MY COMPANY is now down one employee. The person I wrote about last time [QuickLink 41938], who authorities suspected was using his workstation to trade child pornography, was escorted from the premises last week.

Since receiving the search warrant that led to his dismissal, I haven't heard anything from the investigators, but I'm sure the guy is in big trouble. We had a chance to analyze the image of his hard drive, and there were extensive directories with different categories of porn. Not that you'd notice unless you opened the files: He had saved almost all of the images with innocuous-sounding file names. I'm sure this was done to bypass our filters, which detect files that have words related to pornography. I don't think my company will suffer any loss as a result of this guy's departure, as he seems to have spent most of his time at work on his illicit collection.

SECURITY MANAGER'S JOURNAL

Surprise Guest

This week I received a message from a friend of mine who works for a vendor my company uses. He suggested that my security team and I review our wireless policy, because he was able to connect to our corporate intranet via an open wireless access point while visiting another department recently. This was both surprising and embarrassing, since we have established a policy on wireless LAN use and thought we had rooted out problem devices months ago.

I called my friend, and he said he had been visiting one of our software development centers to give a demonstration of his company's debugging software when he noticed a problem. During the presentation, his personal firewall started popping up messages, asking for permission to allow connections to the Internet.

But he wasn't physically attached to the network and was in the middle of giving a PowerPoint presentation. After the meeting, he did some checking and noticed that his laptop's integrated WLAN adapter had automatically connected to an access point in our facility. The Service Set Identifier code on that access point was set to the default name "default" with no encryption enabled, so he had unfettered access to our corporate intranet.

My team and I try to be proactive in monitoring for these problems. We use the AirWave Management Platform from AirWave Wireless Inc. in San Mateo, Calif., in combination with access points from 3e Technologies International Inc. in Rockville, Md., to scan for rogue devices. But we use it only at our corporate headquarters. We don't have the budget to purchase this infrastructure for remote offices such as the software development center.

I called the IT manager at the software development center, shared the story from my friend and asked him if he knew of any authorized wireless access points there. The manager said he installed two access points about a year ago but said he had removed them when our WLAN policy came out several months ago. Nonetheless, he agreed to walk around his facility to search for the rogue access point.

The manager's search turned up nothing, so I packed up our AirMagnet Handheld, which we bought from Mountain View, Calif.-based AirMagnet Inc., and sent it to him by courier. Two days later, I walked him through operating the device. He immediately picked up a single wireless signal and tried to locate the access point using the signal strength meter. However, because of the construction of the building, he was unable to pinpoint the device's location.

Backtracking

The next step was to try to locate the access point via the Media Access Control (MAC) address on the switch to which it was connected. Every network interface card (wireless or not) has a unique hardware address. The first three octets identify the vendor, and the remaining characters provide an ID number. Since the access point was "open," meaning no encryption or other access control was enabled, the manager could use the AirMagnet device to associate to the access point. And since I already knew the MAC address of the wireless PC Card installed in the Compaq iPaq that runs the AirMagnet software, we could trace that back through our network infrastructure.

I called the network engineer responsible for the switch at the development site, gave him the iPaq's MAC address and asked him to conduct a search of the switch ports. A few hours later, he called back with the information: Cat Switch 02, Blade 4, Port 8. The network engineer then gave me another MAC address — the one for the wireless access point. The access point acts as the hub for wireless devices, so both the access point and the device share the same switch port.

The IT manager at the site then had the facilities manager trace the Ethernet connection from the switch port to the patch panel. Then, using a map, he determined the exact location of the suspected wall jack. It was in a cubicle belonging to one of the software engineers. The offending device was a Linksys access point that the engineer had purchased for $79 at Wal-Mart.

The user hadn't seen our wireless policy and didn't know about security configurations or the ramifications of installing an unauthorized, misconfigured access point. He had simply installed the device as a convenience. The facilities manager removed the access point and gave the engineer a copy of our policy. Other than mentioning the incident to his supervisor, there was nothing else to do.

One lesson I learned is that after we issue a security policy, we should follow up with regular reminders. We'll also make some changes to our employee orientation program to include a short discussion on current security policies (especially wireless) and to reiterate existing policies and acceptable-use guidelines.

WHAT DO YOU THINK?

This week's journal is written by a real security manager, "Mathias Thurman," whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com, or join the discussion in our forum. **QuickLink a1590**

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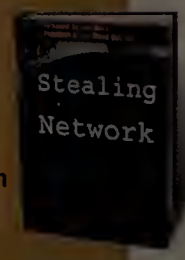
SECURITY LOG

Security Bookshelf

Stealing the Network: How to Own the Box, **by Ryan Russell, (ed.), Ido Dubrawsky; Syngress, 2003.**



Unlike most of the security-related books I read, this book is fiction. It's a series of stories, each of which is about 30 pages, that take the point of view of a hacker as he sizes up and hacks into different infrastructures. Although the scenarios are fictitious, the techniques used are real. The hacking tools and methods discussed cover everything from routers to sniffing the traffic from BlackBerry devices. The authors offer an interesting perspective. Plus, the book is a fun read.

– Mathias Thurman

Reactivity Offers XML Firewalls

Reactivity Inc. last week introduced a family of security appliances designed to secure Web services applications. The Belmont, Calif.-based security vendor's new XML Firewall 2300 series is aimed at helping companies avoid threats such as XML denial-of-service attacks, said the company. Pricing for the firewalls starts at about $50,000.

Symantec Updates ESM Security Tool

Symantec Corp. last week announced Enterprise Security Manager (ESM) 6.0, the latest edition of the Cupertino, Calif.-based company's vulnerability assessment and policy compliance tool. The upgrade is designed to help IT administrators compare their networks' security against industry benchmarks, Symantec said. ESM 6.0 is available now. ESM Manager software sells for $2,394. ESM agent software is priced from $114 for an agent that runs on Windows or Unix workstations to $1,995 for an agent that runs on iSeries servers.

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BRIEFS

New Apps Assess Compliance Risks

Providus Software Solutions Inc. has introduced new versions of its two risk management applications for Sarbanes-Oxley and Basel II regulatory compliance. The products provide financial institutions with a top-down view of potential risks across lines of businesses, according to Nashua, N.H.-based Providus.The Risk-Resolve 3.0 applications are built on Microsoft's .Net Framework for Web services and provide users with workflow and permission capabilities for entering, viewing, tracking and reporting on risks and risk-related data. Pricing ranges from $50,000 to more than $300,000.

Suite Monitors Web App Performance

Visualware Inc. in Turlock, Calif., last week introduced Desktop Management Suite, a set of four applications to track and manage Internet application performance. The components are designed to measure the time it takes a Web page to be received by a user; assist help desk staffers in spotting problems between a server and a customer desktop; help tech support workers check a customer's desktop configuration; and measure and report on the status of services from an application server to a customer location. Pricing starts at $28,450.

Cray's Red Storm To Go Commercial

Cray Inc. next year plans to release a commercial system based on its Red Storm supercomputer at the Sandia National Laboratory in Albuquerque. The 10,000-processor, Linux-based system – which costs approximately $90 million – is capable of operating at 40 trillion calculations per second. Seattle-based Cray also said last week that it will use the Opteron chip from Advanced Micro Devices Inc. for the commercial version.

PAUL A. STRASSMANN

CIOs Share the Blame

A LIVELY DEBATE has been generated by the recent report "CyberInsecurity: The Cost of Monopoly," produced by, among other credible security experts, Daniel Geer, Charles P. Pfleeger and Bruce Schneier. The vulnerability of any monoculture — the central theme of the report — was noted here five years ago ["Microsoft a U.S. Security Threat," Nov. 30, 1998, QuickLink a3770].

While the paper makes the case for Microsoft's culpability in magnifying security risks, that's only a partial explanation of the situation we're in. Something must be said about the conduct of IT managers who have ignored rising security threats.

PAUL A. STRASSMANN (paul@strassmann.com) is convinced that even a palm-size device with the power of a mainframe warrants data center security measures.

As microcomputers acquired mainframe power, tens of millions of amateurs got hold of the capacity to mess up systems in ways that previously were available only to professional programmers. As a result, security has now become the main inhibitor to further computerization. IT management should shoulder part of the blame for several reasons:

1. Abdication. When desktops first showed up, CIOs were pleased that they could unload the burden of satisfying rising demands to enthusiastic amateurs whose costs could then vanish into administrative expenses. Complaints about a lack of service could be unloaded to where they couldn't reflect on the CIOs' difficulties in dealing with technological innovation. For example, when the U.S. Navy and Marine Corps set out to harness uncontrolled desktops, they found over 100,000 "legacy" applications instead of the 2,000 they expected to find. Seizing control is now difficult because most of the useful work is done on local applications and not through services provided by the Navy/Marine Corps CIO.

2. Absenteeism. When computing devices started connecting to the Internet, CIOs tolerated the widespread practice of jump-starting local application services with few security safeguards. For this lack of security leadership, the CIO received accolades from computer magazines without much accountability for consequences.

Three years ago, much of the federal administrative bureaucracy became a Web-page development shop. When I got to NASA, I asked for a count of Web addresses in the organization; we stopped at 2,904 and 4.3 million individual pages. Much of the most effective work in using computers as a tool for collaboration and communication was done outside of the organizations that the CIO was supposed to guide.

3. Negligence. In the past decade, CIOs, allied with enthusiastic corporate executives, diverted their attention from managing the total costs of computing to lobbying for incremental funds for attention-grabbing technologies, such as client servers, enterprise systems or Web services. Such projects could be managed as separate tasks and were presented to corporate executive as isolated commitments. While concentrating on appealing innovations, organizations neglected to make investments in the reliability and the security of the infrastructure. I blame the CIOs for not making the case for the necessary funding to implement networkwide security because that would have required the imposition of an enterprisewide discipline. Thus, the CIOs ended up managing only what they had a charter to manage, which was a shrinking share of the total cost of IT. With such dilution of CIO power, nobody stepped up to impose order on the desktops because that was just too hard to do, was politically unpopular and was a losing proposition from a budgeting standpoint. Increasingly decentralized computing devices were allowed to infiltrate an increasingly rickety shared infrastructure without any safeguards that might prevent the inevitable security collapses.

The time has come to pay for decades of unsafe computing. And the price will exceed the cost of meeting the Y2k threat. Executive management will now insist on the following:

- A complete accounting of the security of every computing asset and every conceivable entry point into an organization's network. This will include all portals, operating systems, routers, switches, wireless devices, firewalls and modems, as well as all data entry applications.
- Certification that there is a 100% enforcement of real-time authentication and authorization of access to files, to operating software and to applications.
- Government certification that the custody and retention of all transaction records meets worst-case contingency scenarios.

Through abdication, managerial absenteeism and negligence, we have ended up with millions of insecure mainframes on desks and laptops, and in briefcases. Microsoft profited from providing software that can be best characterized as trying to serve all, at all times. Nevertheless, the lack of adult supervision and accountability from CIOs also deserves a share of the blame for the current deplorable state of insecurity. **42431**

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Developing IT Skills 'To Go'

A national apprenticeship program combines classroom and on-the-job learning to help IT workers bring their skills up to speed. **Page 44**

BOOK EXCERPT

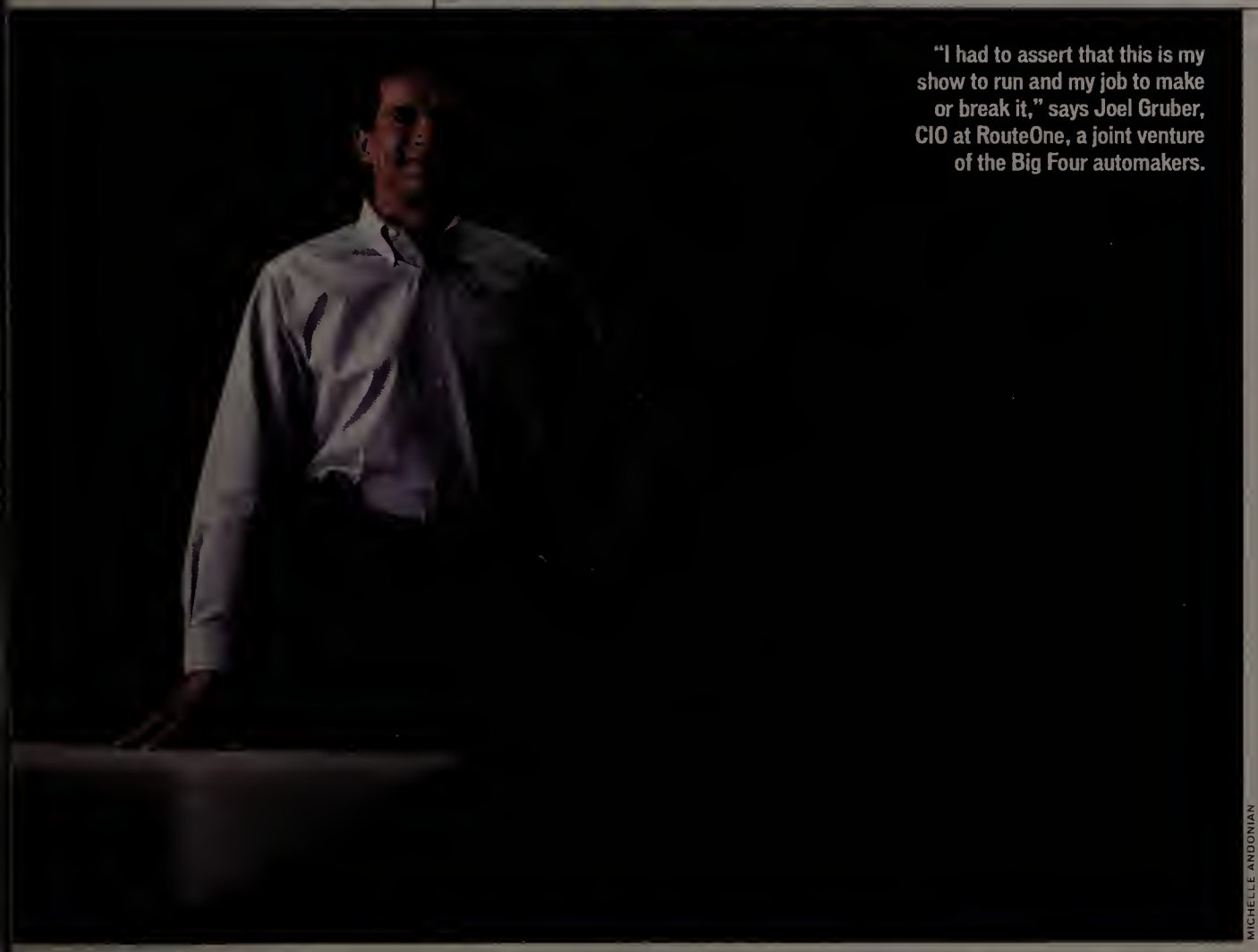
Get Sales Chiefs On Your Side

Sales managers can make or break a CRM or sales force automation project, so it's important to ensure that they're enthusiastic supporters of such efforts. **Page 46**

OPINION

Satisfying IT Customers May Be a Bad Idea

Paul Glen (right) says the clients of IT departments are seeking expert counsel and a good experience, not a fast transaction or beautiful code. **Page 48**



"I had to assert that this is my show to run and my job to make or break it," says Joel Gruber, CIO at RouteOne, a joint venture of the Big Four automakers.

MICHELLE ANDONIAN

Serving Many Masters

As the CIO of an automotive joint venture, **Joel Gruber** has to work with four CIOs looking over his shoulder.

By Kathleen Melymuka

WHEN JOEL GRUBER BECAME CIO at RouteOne LLC, a joint venture of four major automakers, he found himself with more help than he had bargained for. The CIOs of the partner companies — his advisory board — were very opinionated, senior people with more experience than he had. No one was quite sure how to relate to one another. "The situation was really ill-defined," Gruber recalls.

RouteOne LLC

Mission: To create a common, Web-based credit application process for more than 22,000 automotive dealerships.

Four equity partners:

- DaimlerChrysler Services North America LLC
- Ford Motor Credit Co.
- General Motors Acceptance Corp.
- Toyota Financial Services Corp.

SOURCE: WWW.ROUTEONE.COM

As a result, his first days were filled with too much advice, too much discussion and too few decisions — until he took charge. "I had to assert that this is my show to run and my job to make or break it," he says. "I'd say, 'I've heard all your input. Now we'll do it this way.' "

Between 1991 and 2001, joint ventures increased sevenfold, according to the *MIT Sloan Management Review* (Summer 2003). CIOs in these hybrid organizations need to learn new survival skills: to serve the start-up venture, but also the founding partners; to leverage the IT expertise of the partners without being overwhelmed by them; and to assert their own authority or cede it.

Southfield, Mich.-based RouteOne is a joint venture of the credit arms of the Big Three automakers — DaimlerChrysler Services North America LLC, Ford Motor Credit Co. and General Motors Acceptance Corp. (GMAC) — plus Toyota Financial Services Corp. It was formed late in 2001 (Toyota joined in 2002) in response to dealer requests for a Web-based credit aggregation system. Dealers wanted to complete each customer's credit application once and send it simultaneously to their in-house credit companies as well as independent lenders for immediate responses. Previously, each lender had to be approached separately, and responses took a long time.

The heads of the four global finance companies re-

Serving Many Masters

Continued from page 41

alized that because so many of their processes were similar, they could form a joint venture, with each investing less and gaining a better system sooner. That's how RouteOne was born.

Since then, a team of 50 RouteOne employees, half in IT, have built a system that's securely integrated with back-end decision engines at more than two-dozen lenders. "Web services is really what we're talking about," says Gruber. "We are a gigantic XML messaging conduit with a user interface attached on the side." The system is currently being piloted with several dozen dealers, and after adjusting for dealer feedback, it will be broadly launched over the next several months.

Joint-Venture Virtues

RouteOne benefits from the financial power and expertise of four top companies, each of which has mature, sophisticated technology. Its executives are on loan from the automakers' finance arms; its board of directors includes two representatives from each company, and Gruber heads the CIO advisory board.

The board's expertise came in handy in making some early decisions on core technologies. For example, in discussions of how to handle messaging, GMAC weighed in with the details of its standard technology from SeeBeyond Technology Corp. "We had instant access to people in-the-know as to the pros and cons of this technology," Gruber recalls. He eventually adopted it.

UNDER THE HOOD
Get technical details of RouteOne's Web-based credit system:
QuickLink 42046
computerworld.com

When RouteOne needed to negotiate a key service contract with Cap Gemini Ernst & Young for systems integration services, Linda Taggart, global CIO for GMAC at the time, pitched in to help. "She has a very tough negotiating style," Gruber says. "It was eye-opening and very beneficial."

The parent companies also helped Gruber get his evolving IT house in order. When he tapped Ford Motor Credit for help in setting up his project management office (PMO), key staff members were generous with their time and advice. "They really opened up their PMO book," he says.

But there were difficulties as well. Cultural differences among the partners made communication frustrating and put people on edge. "We'd have long conversations," Gruber recalls, "and at the end, people would go back to their offices and close the doors and breathe for a while and then come back out."

In a joint venture, seemingly simple technical decisions can have political ramifications. "Decisions can create turmoil if one of the owners feels shortchanged because the decision made more sense for the others," says RouteOne CEO Mike Jurecki, who is on loan from Ford Motor Credit.

For example, there are differences in the way the partners identify dealerships. If a dealership has two branches in different parts of town, some count it as one dealership and some as two. "We needed to build a mechanism so that we would not force a uniform definition on all to the disadvantage of some," explains T.N. Subramaniam, RouteOne's chief architect.

Navigating the political terrain of a joint venture is "very difficult" for a CIO, says Jurecki. "My single biggest concern was how [Gruber] was going to handle the three 10,000-pound gorillas he had to deal with day in and day out," he says, referring to the three original venture partners.

Before Gruber was hired, IT decision-making at RouteOne had been a jump ball, with various people taking the lead. "It was a mishmash," Jurecki says.

When Gruber arrived from DaimlerChrysler Services, where he had been responsible for lease and loan programs, asserting his authority as IT chief wasn't easy. "We've got four very mature, very capable technology organizations, and if you get three technologists in a room, you get five opinions," Gruber says. But he learned early to draw the line. "They're an opinionated bunch," he says of the CIOs, "and though I cherish their input, it's my decision."

And Jurecki backs him 100%. "You have to let the CIO do his job," he says. There was some early pushback from the CIOs, Gruber recalls, "but I think it was just a test to see if I meant it. I think it was actually a relief for them that they had someone who was going to make a decision and stick by it."

Still, the CIO advisory board meetings can be "noisy," Gruber says. For example, developing Web services standards was a challenge because several possible standards were still in draft form at the time. Subramaniam's recommendation to develop a "lite" version of the Web Services Reliability standard made some people nervous, Gruber recalls, but he ran with it. "There was some concern that we were moving too fast, but T.N. made a convincing case, and we thought the benefits outweighed the risks," he says.

Gruber likes a good debate. "Your best friends are those who challenge you on your beliefs and cause you to think it through and prove to them why it's a good idea," he says. "There's a lot of that going on, but almost entirely in civil tones."

Gruber has become a "human systems integrator" — able to listen to all sides and find common ground for making good decisions, says Shaun Coyne, CIO at Toyota Financial Services. Along the way, RouteOne has developed its own unique culture, which makes things go smoother than in the early days, Gruber says. But no one claims that it has been easy. "From an IT project perspective, it's every bit as complex as it seems," says R.J. Bussone, IT project delivery manager at RouteOne. "You can never forget about that."

Now that Gruber and the others have hammered out a way of working together, he's looking forward to the next phase. "We really want to hear what the dealers have to say" after the pilot, he says. "And we already have a whole list of enhancements. Release 2 is where it gets kind of fun." **42042**

Melymuka is a Computerworld *contributing writer. She can be reached at kmelymuka@yahoo.com.*

Making a Joint Venture Work

CIO Joel Gruber says RouteOne's success depended on getting some crucial things right. Among them:

Communication

Get agreement on the definition of key terms, how to communicate and what's off-limits in various forums.

Decision-making

Establish who makes the decision. Otherwise, every issue is a never-ending discussion.

Executive support

Get buy-in and support at the board level from the joint-venture owners. They can line up support in their respective organizations.

Determination

Establish what you need and fight for it right away. Have a lot of small battles early rather than major blowouts later.

Honesty

Be blunt and honest when discussing expectations, particularly with vendors.

Project management

Make it a core competency.

Staff

Get the right people in the right jobs and trust them.

Perspective

Keep your sense of humor.

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There's usually no time for clowning around for McDonald's IT apprentices Waldemar Ramos (left) and Dan Wilkinson. (Alice Rowland, manager of information services organization development, is in the background.)

MARC BERLOW

CAREERS

Developing IT Skills 'TO GO'

A national apprenticeship program combines classroom and on-the-job learning to develop skilled IT workers faster. By Mary Brandel

YIKES! Waldemar Ramos had just learned that the McDonald's Corp. marketing department needed a complete project plan within 30 days for an IT system supporting its new "I'm lovin' it" campaign.

"We didn't even have project requirements at that point," recalls Ramos, a project leader at McDonald's. Just the same, he was able to jump into action — revising deliverables, figuring out the new requirements, calculating how the new priorities would affect other ongoing projects and drafting a revised statement of work. "The nice thing about it was we were able to meet the deadline, as well as complete the other projects," Ramos says.

Pretty impressive — especially considering Ramos isn't even a full-fledged project manager and won't complete his training program until later this year.

But this isn't your average IT training program, either.

In February, McDonald's launched an in-house apprenticeship program for IT project managers in collaboration with the Computing Technology Industry Association (CompTIA), a global trade association. Ramos and nine other McDonald's apprentices have been learning to become project managers via in-house classroom instruction and workshops, as well as meetings with peers and mentors.

Most important, they're simultaneously heading up actual — and sometimes quite crucial — projects, with budgets ranging in size from $50,000 to several hundred million dollars. One apprentice has led 10 projects since the program began. In order to complete the program, the apprentices must master 37 skills to their mentors' satisfaction.

"It responds to what employers are asking for — a combination of knowledge, certification and experience," says Neill Hopkins, vice president of workforce development and training at CompTIA. "This is the first system of its kind to directly relate IT training and certifications with actual on-the-job skill validation."

Or, put another way, "We're taking their day-to-day work and using that as a context for learning," says Alice Rowland, manager of information services organization development at McDonald's in Oak Brook, Ill.

McDonald's apprenticeship program is one of six pilots that CompTIA is helping to administer as part of the National Information Technology Apprenticeship System. NITAS, which debuts in early November, is aimed at building skills and credentials in at least seven IT tracks, the first two of which are IT Generalist and Project Management (next page). All of the apprenticeships are designed to accelerate the transformation of learning classroom theory to using on-the-job IT best practices.

The idea for NITAS actually dates back to September 2001, when the U.S. Department of Labor took an interest in a national apprenticeship program for IT. It chose CompTIA to administer the program and so far has invested at least $3.8 million, which Oakbrook Terrace, Ill.-based CompTIA is matching with its own funds.

Since that time, the pilot programs have generated data to help CompTIA define which skills, education-

al credentials and certifications should make up the apprenticeship tracks. CompTIA has also formalized the system's infrastructure and work processes, trained consultants on how to help employers create their own apprenticeship programs and developed a marketing strategy to encourage large-scale adoption.

Bad Timing?

An apprenticeship program is obviously a boon for people who want to start IT careers and is good for filling gaps during an IT skills shortage. But is it a good idea to be developing new IT talent at a time when the economy is still sluggish and many skilled IT professionals are unemployed?

"If it were a couple of years ago, and you couldn't get the IT talent, it would be a much more interesting program," says Scott Hicar, CIO at Maxtor Corp. in Milpitas, Calif. "It might struggle in today's market because companies can find people with relevant experience." But Hicar has positive thoughts about the program, too. "It would help to have a standard accreditation because it gives you a neutral view of that person's experience," he says.

Jeff Markham, an IT recruiter at Robert Half Technology in San Francisco, a division of Robert Half International Inc., also questions whether the market is right for this sort of program. But Markham says he supports the notion that "if I can get training while getting work done, that's definitely cheaper."

The biggest benefit of the program in this economic climate may be to help retain high-quality workers and develop skills that are hard to find in the labor market, Markham says.

The way McDonald's has structured its project management apprenticeship could serve just that purpose. Its goal was to improve project management as a core skill area "through on-the-job learning," Rowland says. So far, she says, the program has shown "statistically significant improvement in meeting our business objectives," including meeting deadline, budget and customer-satisfaction goals.

All of McDonald's apprentices were already employees when they enrolled in the program. At least one — project leader Dan Wilkinson, who has worked for 17 years at McDonald's in and outside of IT — is using the program as a career-changing move.

Wilkinson, Ramos and eight others first completed three days of in-house training, followed by periodic workshops on areas requiring more depth, such as project life cycles and management skills. Meanwhile, they were assigned a four- to six-month project to complete.

"The sessions are taught at a level where you can pick things up and use them right now," Wilkinson says. A recent class on "slip charts," for instance, helped him figure out where he was falling behind on project dates and how to create a status report reflecting that. "There's no learning curve — once you experience it, you own it," Wilkinson says. "It's another tool in your tool bag."

The apprentices were also given "qual cards," which list 37 measurable skills and were developed with the help of industry standards makers such as the Project Management Institute. "In my first meeting with my mentor, we discussed how the project I was working on applied to the qual card items," Wilkinson says. They chose the most applicable items to tackle, and before the next meeting, Wilkinson learned all he could about those items and applied them to his daily job.

As he developed competency in these skills, he demonstrated his abilities to his mentor, who checked these items off the card. When he works through the entire list, he's finished with the program. Wilkinson says he's halfway through.

CompTIA calls this contextual learning. "When the apprentice and mentor sit down for sign-off, it's always within the context of providing a deliverable to the company," says John Aaron, an independent consultant who's training to become a NITAS consultant. "It's very relevant to what they're accomplishing on the job."

Wilkinson meets with his mentor two or three times a week. Others, such as Ramos, meet once a week. "It's a great opportunity to ask questions while you're not being judged by a manager on what you're doing," says Sally Head, senior project manager and one of five mentors in the program. One apprentice asked her recently why change requests are important. "It's something he felt he should know but was afraid to ask, but he could come to me," she says.

Apprentices also meet with their peer groups twice a month. "We can let our hair down and talk with people who are going through the same experiences," Wilkinson says.

Different Approach

As successful as McDonald's has been with its program for current employees, the Keyport, Wash., division of the Naval Undersea Warfare Center is just as happy with its apprenticeship program that targets new hires. Since May 2002, Keyport has recruited 10 employees to enter its three-year apprenticeship program, says Christina Rude, training facilitator in the information resources department at Keyport.

It takes three years to complete Keyport's program because apprentices go through an IT generalist program first and then into a specialty of either networking or programming. In that time frame, apprentices complete 120 credits of education or training, either at the local community college or through in-house activities; four certifications; and 4,000 hours of structured on-the-job learning. In 2004, Keyport plans to expand its specializations to include security, multimedia and database.

Like McDonald's with its qual cards, Keyport has "building blocks" that apprentices must master, ranging from interpersonal skills and public speaking to technical skills such as security and Web design. The apprentices start out making $12 per hour, progressing to $20 per hour. Upon completing the program, they may be eligible for full-time positions.

Rude says the Keyport organization now believes that on-the-job learning is the fastest way to develop fully productive employees and the best way to transfer knowledge from more experienced workers to the less experienced.

CompTIA officials hope that other companies will start to feel the same way. The association predicts that 384,000 IT workers will become registered apprentices and that 6,700 employers will register as on-the-job learning providers in the next five years.

But whether the program becomes that widespread will depend on the economy. "I think we're a little too early in this slow, gradual pickup in the market to know if a lot of companies are going to do this," Markham says. "But it's a lot more valuable to have real-world working training than [to get training] through a class." **42203**

Brandel is a Computerworld *contributing writer in Grand Rapids, Mich. She can be contacted at mary.brandel@comcast.net.*

WHO'S TRYING IT?

Employers currently participating in pilot programs for the National Information Technology Apprenticeship System:

EMPLOYER	NUMBER OF IT APPRENTICES
Burlington County Institute of Technology Medford, N.J.	20
Internetworking/cabling company (name undisclosed)	18
McDonald's Oak Brook, Ill.	10
Naval Undersea Warfare Center Keyport, Wash.	10
Exodus Homes Hickory, N.C.	7
Cosmopolitan Chamber of Commerce Chicago	3

GETTING STARTED

IN THE NATIONAL INFORMATION TECHNOLOGY APPRENTICESHIP SYSTEM, the IT Generalist and IT Project Management tracks are complete and ready to implement. Other tracks planned for 2004 include the following:

- Information assurance/security
- IT enterprise management
- Database
- Web e-commerce
- Network specialization

On the just-launched NITAS Web site (*www.nitas.us*), employers can obtain information about the apprenticeship tracks, on-the-job learning techniques and how mentors can be most effective. The site will also offer Web-based tools for tracking and assessing apprentice progress and generating certificates.

Employers that want to implement an NITAS apprenticeship program can also register at the Web site. Registration fees vary depending on the number of apprentices participating and company size; the fees will be waived for the remainder of 2003.

– Mary Brandel

GET SALES CHIEFS ON YOUR SIDE

Sales managers can make or break a CRM or sales force automation project. BY MICHAEL GENTLE

MICHAEL MORGENSTERN

FIELD SALES representatives are key to the success of any CRM sales suite, but there's another group of users that may be even more important: their sales managers.

The sales manager is not only in charge of territory assignments for his sales reps, he's also the manager and coach who helps ensure his sales reps meet their objectives. In order to do all of this effectively, the sales manager needs constant information from the sales reps about their leads, their active prospects and the progress of their opportunities. A CRM tool is extremely well positioned to provide this information and can make a sales manager much more effective. In fact, the sales manager probably has the most to benefit from the use of a CRM or sales force automation tool. He's your best ally in the battle for mind share and buy-in for a CRM project.

The close relationship a sales manager has with his team of field reps also means he's *the* best person to sell them on the benefits of a CRM system. The sales manager has the key advantage of being able to make usage mandatory and to get compliance. If someone has to wield the stick, the sales manager has the best chance of doing it effectively.

BOOK EXCERPT

On the positive side, a sales manager can help his sales reps accept the new processes and benefits and answer the famous question, "What's in it for me?" He can also insist that all reporting and activity management be done using the new system — not e-mail attachments.

In weekly meetings, for example, if a sales rep refers to a lead or an ongoing opportunity that he hasn't entered in the new system, all the sales manager has to say is that it's not visible on his laptop and he won't talk about it until it is. You can be reasonably sure that within one week of this sort of training, everyone on his team will be using the system.

On the negative side, the sales manager can do exactly the opposite, with devastating results. During the training session for one real-life sales force automation system, for example, sales managers categorically rejected the new system with comments like, "Whoever dreamed up these processes doesn't know how we really work." As the ratio of sales managers to sales reps is about 1 to 8, you can see that you don't need more than a handful of sales managers to send an implicit or explicit message of noncooperation to their teams, effectively stalling the project.

So how can we get buy-in from these all-important sales managers? The basic prerequisite is an operational pilot program with full participation of a sales manager and his team. After a successful pilot (which should, by definition, yield at least one enthusiastic sales manager), the rollout for the rest of the project should include the following key activities and milestones:

1. A one-day off-site workshop for all sales managers. The goal is to sell the system and the benefits of the new or changed processes. This workshop is run by the CRM project team, with the full blessing and participation of the sales director. This group will demonstrate the pilot system, emphasizing the lessons learned and quantifying (wherever possible) the benefits. This should be followed by a hands-on session so that they can get a feel for the new tool. Open debate about the pros and cons should be encouraged to get all the issues on the table for an informed decision. At the end of the workshop, there should be a vote on how to proceed, based on real benefits and concerns.

2. The feedback from this workshop should determine whether there will be a full-scale rollout. If the sales managers aren't sold on the benefits, for whatever reason, why turn the project into a crapshoot and proceed with a rollout to sales reps who'll take their cue from their sales managers?

3. Sales managers must be present at the training sessions for their teams of sales reps. The fact that they already attended the workshop must under no circumstances be an excuse to skip the training session. They're there to anticipate objections, placate Luddites and ensure buy-in to the new processes. They have to make it abundantly clear that from the very next day, the new system will be the only channel of communication for sales reporting.

4. Since sales managers are laying their credibility on the line, the resulting system must be reliable, with high-quality data and very extensive support during the first few weeks. Otherwise, even the most well-intentioned sales managers might defect and fall back to their old ways. You won't get a second chance.

Major battles are won by choosing your allies wisely, and sales managers are the best allies for a CRM project. If you don't have this buy-in — not just "signed-off" buy-in, but actual enthusiastic and palpable buy-in — you might as well put the project on hold. Sales managers can stop any CRM initiative dead in its tracks simply by saying (rightly or wrongly) that it will hurt sales. And there won't be much the sales director can do about it. QuickLink 41899

TOP FIVE REASONS

1. Project initiated with unclear goals, metrics and expectations
2. Poorly defined or flawed sales processes
3. Lack of commitment from senior executives, sales management and channel partners
4. Lack of strong buy-in from salespeople
5. Too much emphasis on management needs; not enough emphasis on salespeople and customers

SOURCE: GARTNER INC., STAMFORD, CONN.

CRM IN-DEPTH

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QuickLink k1300
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This article was excerpted from The CRM Project Management Handbook *(Kogan Page Ltd., 2002). Gentle is an international CRM consultant based in Paris.*

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BRIEFS

States' Outsourcing To Reach $23B

Spending on IT outsourcing by state and local agencies is expected to increase from about $10 billion this year to more than $23 billion by 2008, according to the "State & Local Outsourcing MarketView," published by Input, a Reston, Va.-based consulting firm. The report cites anticipated shortages in experienced government IT workers and state revenues as factors driving the outsourcing increase. Repetitive processes and transactions, such as Medicaid and welfare payments, are the types of services that will most likely be turned over to outside vendors.

Ensenda Taps IT Exec From UPS

Ensenda Inc., a San Francisco-based delivery company, has named Gene Wojciechowski as vice president of technology. He will lead customer and partner integration and other technology efforts. Wojciechowski has 27 years of IT experience, specializing in the supply chain and logistics management industries. Before joining Ensenda, he was CIO at UPS Freight Services, where he led a staff of more than 200, and was also an information systems executive at USL Capital Corp. Wojciechowski will report to Ensenda CEO Chris Mannella.

Curative Health Appoints New CIO

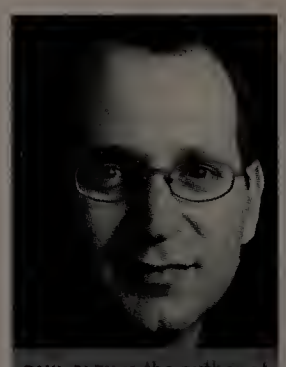
Anne Bruce, a former IT leader at IBM, Ernst & Young International and, most recently, eLoyalty Corp., has joined Curative Health Services Inc. as CIO. In her new role at the Hauppauge, N.Y.-based disease management company, she will oversee the consolidation of all IT systems to one platform and other IT strategies designed to expand Curative's Specialty Pharmacy and Wound Care businesses. Bruce will report to Curative CEO Joseph Feshbach.

PAUL GLEN

Satisfying IT Customers May Be a Bad Idea

MOST IT DEPARTMENTS I encounter say "customer satisfaction" is among their key goals. Unfortunately, this idea seems to lead too often to poor results. While the sentiments are laudable, the law of unintended consequences seems to interfere. Goals are tricky things. Well-intentioned yet poorly selected goals frequently lead organizations to do exactly the wrong things.

For example, think about the Avis car rental people. Their slogan is "We Try Harder." I imagine them emphasizing the importance of trying harder every day. And being a good company, the staff responds by trying harder all the time. That's nice in a motherhood-and-apple-pie kind of way, but as a customer, I don't really care how hard they *try*. I'm concerned with how well they *succeed*. If they offer me flawless service and great prices without breaking a sweat, I'm thrilled. If I'm treated to long lines and high prices from earnest and overworked staffers, I'm not a happy customer. There are no good grades for effort.



PAUL GLEN is the author of *Leading Geeks: How to Manage and Lead the People Who Deliver Technology* (Jossey-Bass Pfeiffer, 2002) and principal of C2 Consulting in Los Angeles. He can be reached at info@c2-consulting.com.

My observation is that customer satisfaction is generally one of those goals that misleads people on both words: *customer* and *satisfaction*. And what may seem like a petty case of semantics leads well-intentioned professionals astray. Inappropriate metaphors make poor foundations for reasoning about day-to-day decisions.

IT departments don't really have customers; they have clients. The dictionary definition of *customer* is "one who purchases a commodity or service." People striving for customer satisfaction tend to think of a customer as someone who's involved in a transaction, someone standing in a checkout line making a discrete purchase.

But IT customers, even if they are paying ones, aren't involved in a short-term deal. They're involved in a long-term relationship with a group of highly skilled professionals. They're really *clients*, which the dictionary defines as "people who engage the professional advice or services of others." And the dynamics of a professional partnership are quite different from those of a commodity transaction.

Using the image of a customer often leads to the "customer is always right" mentality that's so necessary when every transaction is a new deal. But in this case, the customer isn't always right. Clients come for expert counsel, not sycophantic submission.

Satisfaction comes from experience, not technology. Most people in technical departments assume that their clients judge them by the quality of their technology. Of course, this seems like a natural assumption. Technology is what they're buying — isn't it?

Customers may judge their satisfaction in large part by the quality of the products they purchase, but clients don't. Since clients look to you for expertise, they're rarely in a position to judge the quality of your work.

While clients can usually distinguish between adequate and inadequate work, they may not be able to distinguish between good and brilliant work. If they knew enough to differentiate, they probably wouldn't need your help.

So instead, they judge the quality of your work based on proxies. They judge based on the experience of being a client rather than the beauty of your code.

Imagine that you hired a lawyer to write your will. How would you decide if you were satisfied? Your decision probably wouldn't be based on whether the will was written in perfect iambic pentameter. Assuming the legal document contained the key things that you requested, you would judge based on the experience of working with the lawyer.

Did you receive the deliverables on time? Did you get explanations in language that you understood? Were you condescended to? Was the price as promised? Was the lawyer available when you wanted to talk?

Satisfaction in professional relationships is based more on the experience of the relationship than on the quality of the product. Using customer satisfaction as a goal too often leads to efforts to improve satisfaction by improving the product, emphasizing the one thing that your *clients* probably won't notice.

So instead of focusing on customer satisfaction, a better goal is to create a quality "client experience." When you do that, both you and your clients can share in a more satisfying relationship.

42156

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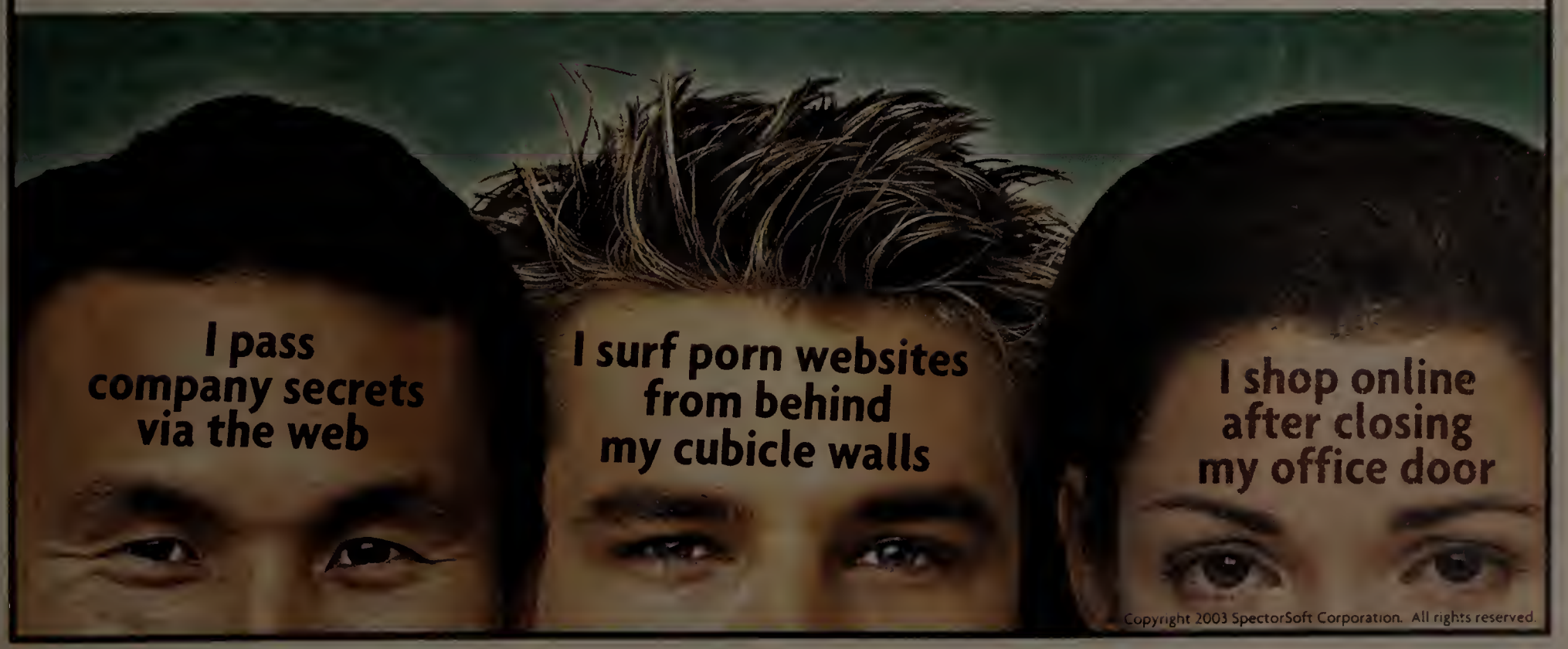

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Prog/Analysts to analyze, design business/scientific appls using SAP R/3, ABAP, VB, Oracle, SOL Server on UNIX/Windows envir; develop tech design docs; determine reqs; perform monitoring, quality control; test/troubleshoot project appl code according to system objectives. Require: BS or foreign equiv. in CS/Sci./Engg. (any branch) & 2 yrs of exp. in IT. Travel involved. High salaries. Respond to: HR, Smartsoft International, Inc., 7900 Steubenville Pike Suite 21, Imperial, PA 15126

NE OH Medical Devices seeks Senior Software Engineer to research, design and develop software algorithms for Image-Guided Surgery system, managing project for Image-Guided Surgery system, applying principles and techniques of computer science, engineering and mathematical analysis. Ph D. in Computer Engineering req. Must have strong mathematical background/w quality and regulatory requirements for medical products (FDA, CE, ISO), medical imaging/scientific visualization, image registration, image processing, C/C++, Unix or Linux, Tcl/Tk. Resumes send to: 3740 Euclid Ave. Cleveland, OH 44115. No calls. EOE

System Admins to install, maintain, administer Windows NT, Linux HP-UX,SCO/Solaris; plan, maintain, troubleshoot LAN/WAN; manage networking protocols TCP/IP, IPX/SPX, etc; install, upgrade network hardware/software. Require: B.S. or foreign equiv with conc in CS/Science/Engg.(Any branch) and 2 yrs exp in IT. Travel involved. High salary. Respond to: HR, Radiant Technologies, Inc., 335 Majestic Cove, Alpharetta, GA 30004.

SYSTEMS ADMINISTRATOR-Miami, FL; scught by Global Logistics/ Freight Fwdg Co. Req'd to dsgn, admin & maintain IT & HW infrastructure for LATAM region. Dvlp IT sys & d/base accounting progs. Must have 4 yrs exp in job off'd or 4 yrs exp as Sys Mgr or Sys Specist. Sys:-S-36; RS6000, Clipper. Must have ablity to work on a global scale to conduct installations in mainframe & NT environ. Send resume to: IT Mgr, Latam, Panalpina, Inc., 3505 NW 107th Avenue, Miami, FL 33178.

Software Engineers: Software life cycle development in Microsoft Development tools suite including C#.Net, Oracle RDBMS tools suite, SQL Server, DB2, COBOL and related tech. to develop array of apps. including secure Client Server/Web based HR, Communication and Govemment apps. Complete job description or to apply contact HR, 3761 Venture Dr., Bldg. 100, Suite 240, Duluth, GA 30096.

Jr.programmer/Ass.programmer Analyst to write & maintain application prog. & collect data to help dev/modify complex data processing systems, prepare specifications. Req'd: B.S in comp sci, comp Eng, or Elect.Eng. 40hr/wk. Job/Interview site: Milpitas, CA. Send resume to Global Finance, 1323 Jacklin Rd., Milpitas, CA 95035.

Programmer-Analyst needed to plan, develop, test and document computer programs. B.Sc. computer science reqd. Fax resume to Fauzan Ahmed @ Quantum Software. 281-895-6623.

Software Engineer: Web/Database Dvlpr: work w/mktg to author all aspects of complex Web Pages, incl scripting, graphic tools, database, interface, storage, security & client training. Guide architectural deployment of h/ware, s/ware, 3rd party components, & protocols using optimal comp languages for client projects. Communicate w/clients, incl primary Chinese mkt. FT. MS, Comp Sci reqd. Send resume only (no calls, faxes or e-mails please) to: # YYY, TOTO GROUP, 1001 Avenue of the Americas, 15th flr., NY, NY 10018.

Computer Systems Administrator. Analyze/maintain/modify applications on IBM mainframe. Req. BS Math/Comp. Science/Rel. Field & 2 yrs exp in job/2 yrs exp as Sr. Analyst/Programmer. Spec. Req. Expertise in COBOL, DB2, CICS, CSF, Cordaptix & Utility Billing Systems. Send Resume: Louie G. Abad, EV3A, Inc., 104 Pierpoint Cir., Folsom, CA 95630(Jobsite).

Software Engineer will be primarily responsible for the design and programming of health care application components in Java. Will participate in team level design and review sessions. Will translate analysis level specifications into implementation design and working Java code. Will document designs using standard and proprietary modeling methodologies, including UML and Entity-Relationship modeling. Will also conduct and participate in peer design reviews for Java, JSP, and EJB code and algorithms as well as use project standard tools and infrastructure such as source code control system, bug tracking software, and newsgroups. Will write infrastructure layer modules for application server side debugging, testing and application resources management. Will design elements of system web presentation layer model. Will write unit and integration test code for all assigned components where appropriate. Will maintain code and implement bug fixes for all assigned areas of responsibility. Requires Bachelor of Science or equivalent in Computer Science, Engineering, Electronics, Mathematics, or Physics and five (5) years in job offered OR five (5) years experience developing enterprise-scale distributed applications. Candidate must also possess demonstrated expertise developing enterprise scale applications in Java and C/C++ for Unix and Windows operating systems; demonstrated expertise developing J2EE applications for WebLogic application server; and demonstrated expertise developing JSP and Swing presentation layer applications. Salary: $90,500/yr, M-F, 9AM–5PM. Send 2 resumes to Case #200202827, Labor Exchange Office, 19 Staniford St., 1st fl., Boston, MA 02114. EOE. Applicants must be workers eligible to accept full-time employment in U.S.

Software Eng. to design, code, implement client/server, distributed middleware applications using distributed technology, object oriented program. Tech., Java, Java File I/O, Servlets, JSP, EJB, JDBC, CORBA, SQL, PL/SQL, HTML, XML, Shell prog., Oracle 9i (RDBMS), Weblogic Server (WLS) 6.1, 7, JBuilder IDE 7.0, Orbix 2000, Visio, Harvest CCC, TOAD, Syncsort, Connect Direct, JProbe 5.0 on Windows NT and UNIX (Sun Solaris) OS. Comp. salary in Compliance with Prevailing Wages. MS in Comp. Applns. or CS or equivalent + 2 yrs. exp. In duties. Comp. salary. Apply: Netserv 6580 Jimmy Carter Blvd, Norcross, GA 30071 with proof of perm. work auth.

Computers-Software Engineers needed. Breakthrough Management Group, Inc., based in Longmont, CO is seeking qual. candidates possessing BS or equiv. and/or rel. work exp. Part of the req. rel. exp. must include 3 yrs. working with Java, servlets & JSP. Duties include: Work with 3 of the following: Java, servlets, JSP, XML/XSL, Oracle, SQL Server. Fwd. resume & ref. via email to: ITemployment@BMGi.com

ONE Network Enterprise (ONE), Inc., a leader in transportation logistics software solutions, is looking for IT professionals with BS comp sci or related & 2-3 yr exp in integration & application development to join our Charlotte, NC location to enhance our hosted transportation application running in web-based J2EE environ. Resumes to: G. Jones, 8500 Freeport Pkwy, South Suite 110 Irving TX 75063

Software Engineers. Exp w/J2EE solution develop using OOAD techniques. Translate transpo execution bus req. to low level software programs using Java/J2EE/JSP/EJBs. Sr **Engineers**. Design, develop, & debug features to support ONE net-native internet business services for multi-enterprise processes using JBoss-Tomcat app server, Ant, Perforce, PVCS Tracker, PLSQL. Exp with Java/J2EE, arch/EJB/JDBC/ Oracle, JNDI, RMI, Beans & Web Tech including JSPs, Struts, Framework, Velocity, Tiles, XML. Sr **Integration Developers**. Design, develop, & debug integrations between customer systems & ONE hosted transpo apps. Exp analyzing bus requirements, developing specs for data integration solutions, & designing & implementing bi-directional integrations between EDI & Propriety data format & XML formats using Java/XML/ XSL on Sun Solaris platform.

PLM Consultant

Dassault Systemes Services, LLC is dedicated to helping its customers realize the benefits of 3D product lifecycle management (PLM) solutions.

We are looking for consultants to analyze our manufacturing clients needs and configure solutions using the Dassault Systemes family of PLM software. Consultants will work on site at customer's locations and will be required to travel throughout the United States 60% of the time.; implement PLM software; and provide technical support. These positions require a Bachelor's degree in Mechanical Engineering or a closely related field and experience with PLM software.

Dassault Systemes Services, LLC promotes a work environment that focuses on integrity, teamwork and fun. If you qualify, please send your resume indicating the position of interest to: Dassault Systemes Services, LLC, 10926 David Taylor Drive, Suite 300, Charlotte, NC 28262 or cv@ds-ca.com. Reference #: 2151. Please indicate the reference number on your resume.

We are an equal opportunity employer.

Softcon USA inc a **fast Growing software firm is looking for the following with bachelor's degree in computer science/ related field.**

Computer consultants: 3 plus years experience in Design development and Test in UNIX, Linux, Windows NT/2000/, Java Technologies, PeopleSoft, Oracle/Applications, Data Warehouse, Siebel, SAP, .Net, EAI, SQL Server, Webmethods, WinRunner, LoadRunner, TestDirector, SQA and Rational Rose.

We accept foreign education equivalent of the degree, or the degree equivalent in education and experience.

Send resume and covering letter to: 2604 E. Dempster St, suite 209, Park Ridge, IL 60068, e-mail jobs@softcon-us.com

Business Systems Development Manager. Will be responsible for development, deployment and support of core business systems, with particular emphasis on Glovia. Will participate in departmental management and organizational development. Will plan IT technology strategy development and implementation. Will work closely with business managers to understand business strategy and business drivers. Will manage information systems projects, including vendor and user relationships. Will develop and maintain defined work processes and procedures. Will maintain delivery focus and be attentive to development schedules. Requirements: B.S. in CS, IT, MIS, or related field and two (2) years of experience in the job offered or two (2) years experience in the related occupation of IT or Systems Project Management OR in the alternative will accept four (4) years of work experience in Information Technology two of which must be in the role as an IT or Systems Project Manager. Also, demonstrated experience in the following: (1) Managing business development projects; (2) Working on systems architecture and software process development as well as packaged system deployment projects; (3) Working with supply chain management systems, such as MRP, engineering systems, sourcing & procurement systems; and (4) Glovia ERP. Offered salary is $80,000/year for full-time employment (min. 40 hours per week) and standard company benefits. EEO. Submit 2 resumes and respond to Case No. 2002-03222, Labor Exchange Office, 19 Staniford Street, 1st Floor, Boston, MA 02114.

Software Engineer: For co. specializing in mktg & manufacturing of computer software, design, code, implement & test complex product enhancements. Research new feature's concepts & establish plans & coordinate them; analyze problems & suggest innovative solutions; design & test plans; train & review design work of programmers. Req's: B.S. Degree, or equivalent, in Computer Science, Electronics Engineering or a related field. 4 yrs exp in job offered or 4 yrs of programming exp. Exp must include design, analysis, troubleshooting, testing & support. Prof. In Visual Basic, SQL Server, Object-oriented, Oracle, Java, IBM main frame, Medicare/Medicaid, EDI X12 (HIPAA Transactions - 270, 271, 276, 277, 834, 835 & 837), COBOL II, OS/390, DB2, MS, JCL, VSAM, SPUFI, QMF, FILE-AID, MQSeries, CICS, EDI-GENTRAN, CA-7, CA-11, ENDEAVOR, IBM utilities & PLATINUM (CA) tools for DB2. 40hrs/wk.. Send res. to S-1, P.O. Box 17182, Phila., PA 19105.

Computer Programmer sought by dental care organization in Philadelphia, PA to design, develop and implement intranet/ internet applications and system software for claim submission and management. Must have Bach in Comp Sci., Engg or equiv and one yr exp using Visual basic, Oracle, SQL Server, COM, ASP, VSS, Java, Javascript, VBScript, HTML, Adobe Photoshop, Macromedia Dreamweaver, Flash, Astra Load Runner and Winrunner. Respond to: HR dept., A-1 Family Dental Care, P.C., 8539 Bustleton Avenue, Philadelphia, PA 19152.

IT PROFESSIONALS:

POSITION: Network Product Engineer (Glen Mills, PA and other locations throughout the United States)
Responsible for assessing existing data networking and telecommunication infrastructure, utilizing extensive experience in Voice and Data Communication architectures utilizing Cisco and other networking equipment vendors. Responsible for defining a forward-looking data networking and telecommunication strategy to encompass voice and data communications, utilizing experience with WAN (Wide Area Network) strategy development. Apply CCNA (Cisco Certified Network Associate) certification to install, configure, develop and operate Voice and Data networking technologies such as LAN (Local Area Network) Switching, WAN Routing, Circuit Provisioning, QOS, IP Soft-Switches, Security, Wireless, ATM Frame Relay and MPLS (Multi Protocol Label Switching), Voice Over IP, and IP-VPN (Virtual Private Network). Assist with procurement and sourcing of data networking and telecommunication services by interfacing with equipment vendors and carriers utilizing experience in network procurement and dealing with both equipment providers as well as network service providers from a sourcing perspective. Develop training materials and detailed documentation for knowledge transfer to appropriate operations personnel. The wage offered is $84,660/year. The work schedule is Monday-Friday 9:00am-5:00pm. The minimum requirements are as follows: Bachelor's degree in Comp Science, Electrical Engineering, Telecommunications, Mathematics, Information Technology, Business Administration + 3 years experience in the job offered or 3 years experience as a Network Product Engineer. Related experience must also include Certification of CCNA (Cisco Certified Network Associate), Switching Fundamentals, TCP/IP, Routing Basics, WAN Technologies, Wireless Technology, Operating and Configuring Cisco IOS Devices

Please send your resume, referencing Job Order Number WEB367014 to the:
PA Dept. L & I
235 Chelten Avenue
Philadelphia, PA 19144

Database Administrator At Quest Diagnostics Inc., we've become the nation's most respected name in diagnostic testing by focusing on integrity, innovation and quality. We've created an environment where dedicated professionals can learn, grow and advance - all in an atmosphere of pride. We're currently seeking a Database Administrator to be based in Lyndhurst, NJ. Candidate will install and maintain Oracle 8i/9i database and SQL Server database; support Oracle databases providing services to company users; assure data integrity and security; perform SQL Server administration; and monitor, upgrade, and maintain UNIX servers. Requirements: Bachelor's degree in Computer Science, Electronics, Engineering or related field; 5 years experience including implementation; maintenance, and support programming of Oracle databases, systems administration of UNIX servers running Oracle applications, and SQL Server database administration. EOE/M/F/D/V. Please add source code: DBA1017 and forward your resume to: Email:questdiag@alexus.com; Fax 877-588-9942 or mail to Quest Diagnostics Incorporated, P.O. Box 3597, Scranton, PA 18505.

The MathWorks

The MathWorks leads the market in developing and delivering high performance interactive software products such as **MATLAB®** to the engineering and scientific communities. We're increasing our lead by hiring the best people for every job in the organization. We have the following positions available at our offices in Natick, MA:

Embedded Tools Developer
Develop the core of the company's automatic C code generation products for embedded real-time systems for the Real-Time Workshop software suite.

DSP Simulink Blockset Engineer
Engage in DSP algorithm development for audio and telephony application areas. Write floating-point and fine-point algorithms in C++ and MATLAB to be implemented to support both simulation and embedded code generation for programmable and custom hardware targets.

GUI Component Engineer
Responsible for component architecture, user interface design, JAVA component construction, user visible API definition, and default properties definition of the Company's Graphical User Interface components.

DSP Software Engineer
Research, propose, plan, and implement graphical user interfaces (GUI) for spectral analysis, filter analysis and design, and other general digital signal processing (DSP) operations.

Product Developer
Responsible for the development of code generation products for automatic control systems. Will be primarily responsible for Data Management, Graphical User Interfaces (GUI) and new features.

The aforementioned positions are available at all levels and require a minimum of a B.S., M.S., or Ph.D. and 0-8 years' experience.

Additional Opportunities in the Following Areas:
- **Senior Installer Engineer**
- **Senior Manager, Comp, Benefits, & HRIS**
- **GUI Developer**
- **MATLAB- Senior Software Engineer**
- **Siebel Analyst**
- **Business Intelligence Analyst**

For fastest consideration interested candidates should reply via our website: http://www.mathworks.com/jobs

Attn: Human Resources - Job Code: CW1003, The MathWorks, Three Apple Hill Drive, Natick, MA 01760-2098.

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Systems Analyst (Financial). Work sites vary. System analysis, design, configuration financial software full life cycle implementation in SAP SEM BPS. Customize transactional InfoCube for SEM BPS simulation model, Planning Strategies / Packages / Applications. Perform Data Extracting from LIS/LO data extraction, OLTP, legacy system, standards R/3 tables and Flat files. Customizing / enhancing Data Sources. Create and configure InfoSource, InfoObjects, InfoCubes (BasicCube, MultiCube & Remote Cube), ODS. Data modeling and end-to-end cube development w/SAP BW objects. Design and develop Reports and Queries w/BEx Analyzer, BEx Explorer. Collection of business metrics and extraction of KPI/Project /Client Mgmt. Implement ERP Solutions. B.S in Econ., Financial Operations Mgmt, Info Systems, or similar + 1 yr exp. SAP R/3 - SEM and SAP R/3 - BW. Travel req'd. Work sites vary. $68,000yr Must have perm work auth. to work in U.S Refer to job order #web 368354 Send resume to McKeesport Career Link, ATTN ES Manager, 345 5th Ave. McKeesport, PA 15132-2600.

E-Learning Portal Development Manager Manage the design, development, implementation and support of video-centric, e-learning portal projects utilizing in-depth familiarity with video-on-demand edge server networks, e-learning systems including Learning Management Systems and Computer Based Training systems, portal frameworks integrated with corporate application such as e-mail and instant Messaging, and syndicated content including News, Weather, Stocks. Lead large-scale Java development teams and provide technical guidance using development tools including CVS version control systems, IDEs, compilation and stress testing tools, and bug tracking software, for Apache, IIS, TomCat and WebLogic systems, and Oracle and SQL databases. Draft Engineering Proposals, Requirement Specifications, Design Documents and Test Plans to IEEE and ISO9000 standards. Must have a B.Sc. of Computer Science or foreign equivalent and at least 8 years of progressive web-based software engineering experience, including at least 1 year Learning Management Systems development experience with AICC and SCORM standards. Must be willing to travel as technical consultant to client sites M-F Appty to: Ms. Cynthia Burton, Convergent Media Systems Corp , 3490 Piedmont Road Suite 800, Atlanta, GA 30305

SOFTWARE ENGINEER: Design, development, enhancement, testing & support of legacy systems by providing guidance and system support based on customer needs and technical feasibility. Work performed using MS Projects, VISIO, MS Office applications, Lotus Notices, COBOL (Common Business Oriented Language), CICS (Customer Information Control System), DB2 (Database 2), VSAM (File Aid, Virtual Sequential Access Method), Interest; Changeman; Changesolve and Omegamon. Implementing web applications using Weblogic 5.3, Oracle, SQL (Structured Query Language) in UNIX environment. Must be willing to travel temporarily to client sites throughout the U.S. with expenses paid by employer. Exp. to include design, development, implementation & maintenance of software applications performed using MS Projects, VISIO, MS Office applications, Lotus Notices, COBOL, CICS, DB2, VSAM Interest; Changeman; Changesolve; and Omegamon. Weblogic 5.3, Oracle, SQL in UNIX environment.
Bachelors degree or foreign equiv. In Comp. Sci., Maths or Engineering (any branch), 1 yr exp in job offered or 1 yr in related occup, work as above but designated by another title is acceptable. Salary: $85,595.12/year. Hrs of work: 40 per week. Job and interview site: Boston, MA. Send this ad and two (2) copies of your resume to: Case #200202905 Labor Exchange Ofc, 19 Staniford St., 1st Fl., Boston, MA 02114.

Internet Developer (Boston, MA) to design, develop & manage internet/intranet applications, infrastructure & security. Troubleshoot & debug software code & monitor servers, application performance & user accessibility. Develop enhancements to pre-existing applications. Will utilize Java, HTML and web-based languages. Requirements: bachelor's or equivalent in computer science or a related field; 4 years experience in the job offered or 4 years in systems analyst or related positions; and background in Java, HTML and web-based languages including experience using Java, JDBC, JNDI, Javascript, UNIX, Java-Web Server, HTML, PL/ SQL & SQL, Oracle and related tools to develop web-based applications. Must have unrestricted authorization to work in U.S. M-F, 9:00 AM - 5:00 PM, 40+ hrs/ week. Salary: $95,000/yr. Send two copies of resume to Case #200115039, Labor Exchange Office, 19 Staniford Street, 1st Floor, Boston, MA 02114. An EOE.

ValleyUS, Inc. seeks Professionals with multiple openings at Cupertino, CA / Sioux, SD / Wilmington, DE/ Chicago, IL/Austin, TX and other project sites through out USA for the following position:

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Valley US Inc.
H R. Executive
10062 Miller Avenue, #270,
Cupertino, CA 95014

Please indicate the location and position you are applying for.

Software Test Engineer (Fort Worth, TX). Bachelor's degree (or equiv. foreign educ.) in computer science, info. tech. or mathematics & 6 yrs.' exp. in the job offered or 6 yrs.' exp. conceptualizing, writing & implementing software test methodology & the direct use of software test tools, both of which comply with regulated industry standards. [In lieu of Bachelor's degree, will accept 2 yrs. of university study in comp. sci., info. tech. or mathematics & 2 add'l yrs. of exp. as stated.] Stated exp. must include working with the entire information systems test life cycle* and hands on testing of multi-tier information systems. Must also have 1 yr.'s exp. managing multi-tier information systems projects. Conceptualize, write and implement software test methodology & use software test tools to ensure reduction of business & technical costs & correlation with corporate standards for risk-based compliance. Work on entire information systems test life cycle* (test planning, conduct, analysis, documentation, & reporting, & corrective action tracking and re-testing). 40hrs./wk. 8:00 a.m.-5:00 p.m. Apply with resume to: Sylvia Cruz, Alcon Laboratories, Inc., 6201 S. Freeway, Mailstop IL-20, Fort Worth, TX 76134. EOE.

Software Engineer. Three openings. Develop software following RUP methodology; contribute to ongoing design efforts with recommendations to the product development on area of expertise; work with other team members and Project Leads to ensure smooth integration and product releases. Must have Bachelor's degree in Computer Science or related field, one year experience, and experience must include working with multiple database platforms, Rational Rose, Java and related technologies including J2EE, JNDI, JMS, JAAS, and utilizing JUnit with iterative development. Must have implementation knowledge of multiple application servers such as WebLogic, WebSphere or Tomcat. Send resume w/ cover letter to Praxis Technology Group, LLC, Attn: Darcy Bedford, 1500 NW 118th St., Des Moines, IA 50325.

Keytone Technologies Inc. is hiring a VP of Delivery/Engineering. Send resumes to 3140 De La Cruz Blvd, Suite 200, Santa Clara, CA 95054. Travel required.

IT professionals needed for analysis and design of systems solutions across multiple technical and business environments for leading insurance company based in Chattanooga, TN. Requires 2 years experience involving SQL Server, ASP, Crystal Reports, Visual Basic, and COM+. All positions req. BA/BS and 2 yrs. exp. in field. EOE. Send resumes to Ms. Lois Judge, Sr. Recruiter, at UnumProvident, 2211 Congress St. Q291, Portland ME 04122. Include Ref. #2015602.

SENIOR SOFTWARE ENGINEER to design, develop, test, implement and maintain application software using C#.NET, ASP.NET, BizTalk Xlang, XML, HTML, DHTML, COM/DCOM, JavaScript, ActiveX Controls, Visual C++, SQL Server, MS Project, MS Visio and Mercury Interactive Test Director under UNIX and Windows operating systems; Mentor junior engineers and programmers. Require: B.S. degree in Computer Science, an Engineering discipline, or a closely related field with 5 yrs of progressively responsible exp. in the job offered or as a Programmer/ Analyst or Programmer. Extensive travel on assignment to various client sites within the U.S. is required. Competitive salary offered. Send resume to: Edward Mojewski Rd., Softech Development, Inc., 3057 Lorna Road, Ste., 108, Hoover, AL 35216; Attn: Job RT.

Internet Developer (Boston, MA) to design, develop & manage internet/intranet applications, infrastructure & security. Troubleshoot & debug software code & monitor servers, application performance & user accessibility. Develop enhancements to pre-existing applications. Will utilize Java, HTML and web-based languages. Requirements: bachelor's or equivalent in computer science or a related field; 4 years experience in the job offered or 4 years in systems analyst or related positions; and background in Java and web-based languages including experience developing web-based applications with Java and related tools such as Corba, Oracle, UML (Rational Rose) and DB2, WebSphere application server and IBM and iPlanet web server. Must have unrestricted authorization to work in U.S. M-F, 9:00AM-5:00PM, 40+ hrs/week. Salary: $110,000/yr. Send two copies of resume to Case #200115037, Labor Exchange Office, 19 Staniford Street, 1st Floor, Boston, MA 02114. An EOE.

Internet Developer (Boston, MA) to design, develop & manage internet/intranet applications, infrastructure & security. Troubleshoot & debug software code & monitor servers, application performance & user accessibility. Develop enhancements to pre-existing applications. Will utilize Java, HTML and web-based languages. Requirements: bachelor's or equivalent in computer science or a related field; 4 years experience in the job or 4 years in systems analyst or related positions; background in Java, HTML and web-based languages including cross platform (UNIX and Windows) experience developing web-based applications with Java and related tools, C, C++, XML, Rational Rose, MS-SQL and Corba. Must have unrestricted authorization to work in U.S. M-F, 9:00 AM - 5:00 PM, 40+ hrs/ week. Salary: $120,000/yr. Send two copies of resume to Case #200115036, Labor Exchange Office, 19 Staniford Street, 1st Floor, Boston, MA 02114. An EOE.

Computer Information Technology (IT) Services Manager - To provide expertise to our clients in Mac OS X and FreeBSD Unix, Including XML, Perl, PHP languages and emerging new media and IP technologies. Send resume to Executive International, REF: CIT, P O Box 1437, Thousand Oaks, CA 91358

Software engineer to design, develop and implement Wide Data Warehouse and EIS applications using SAS tools on Unix, Linux and NT platforms. Design logical data warehouse/data mart model and define processes to connect data sources. Design and develop the process for data extraction from different data sources. Define the rules and routines for automating the data loading process. Perform duties utilizing SAS/BASE, SAS/SQL, SAS/MACROS, SAS/ ACCESS, SAS/CONNECT, SAS/ODS, SAS/WEBEIS. Masters Degree in Computer Science and three years experience. Bellsoft Inc. 8770 W. Bryn Mawr Ave., Suite 1300, Chicago, IL 60631

Senior Programmer Analysts

We are looking for experienced programmers with the following skills: at least 2 years experience with Microsoft VBscript, HTML, Active X, Jscript and ASP/II, SQL Server, Crystal Reports, PL/SQL and Loan-Quest mandatory. A degree in Computer Science or information Technology is required. Must have excellent communication skills, both verbal and written. Excellent technical peer group to work with. Some travel may be required. For consideration, please fax your resume to (904) 356-1099 or e-mail to hr@MortgageFlex.com NO THIRD PARTY. For further info go to www.mortgageflex.com

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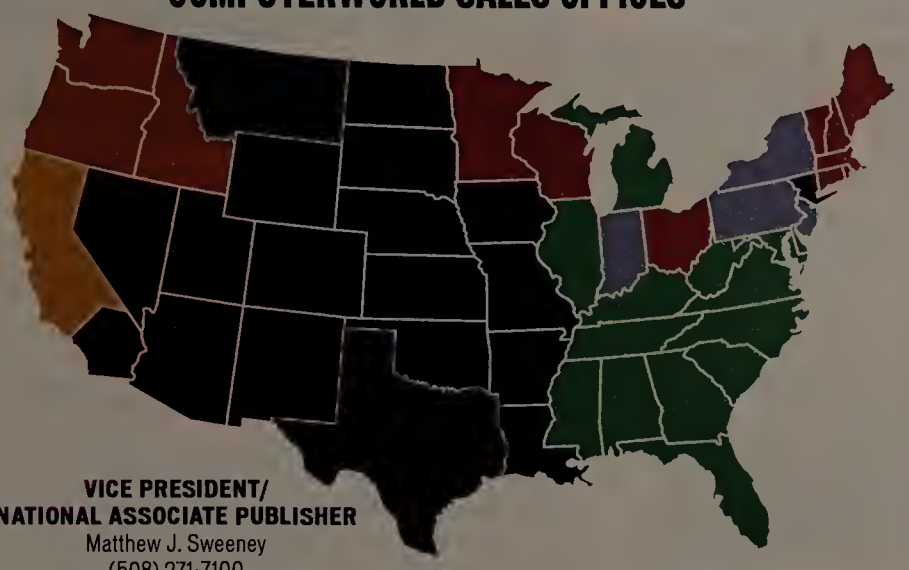

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Big IT Cost Reductions Likely in Bank of America Acquisition Deal

Analysts expect IT workforce layoffs

BY THOMAS HOFFMAN

Bank of America Corp. and FleetBoston Financial Corp. said they will try to minimize layoffs as part of the merger deal the two companies announced last week. But analysts say it will be nearly impossible for the banks to hit a $1.1 billion annual cost savings target without significant cutbacks in areas such as IT.

Even if IT staffing cuts are kept to a minimum, reductions in technology expenditures are expected to play a big part in the cost-savings effort. During a conference call with analysts, Bank of America executives included consolidation of redundant systems and software licenses among steps they plan to take to make the combined bank more efficient, said Jim Eckenrode, an analyst at TowerGroup in Needham, Mass.

But Eckenrode said he believes that layoffs are almost inevitable in administrative and back-office functions, including IT. "They're not going to take a billion dollars out of the organization without reducing head count," he said.

"We understand what they have to say for political reasons," said Gerard Cassidy, an analyst at RBC Capital Markets, a New York-based investment bank. But the No. 1 operating cost for banks is personnel, Cassidy noted.

The total number of jobs at the two companies might not change much because of a previously disclosed plan by Bank of America to add about 550 branches nationwide over the next three years, Cassidy said. But he added that once the operations of the banks are fully integrated, "they'll certainly have redundancies in information management."

Bank of America, which is already the second-largest bank in the U.S., plans to buy Boston-based FleetBoston in a stock-swap deal valued at about $43 billion. A spokeswoman for Charlotte, N.C.-based Bank of America said it's too soon to say what impact the planned merger will have on different types of positions at the companies.

The spokeswoman added that bank executives should be closer to laying out a technology integration road map when the merger nears its scheduled completion in mid-2004. Bank of America officials are pegging a late 2005 deadline for finishing the integration of the companies, she said.

Eckenrode and Bill Bradway, an analyst at Financial Insights in Framingham, Mass., both said there's little overlap in the banks' IT systems. However, both Bank of America and FleetBoston use a customer information system from Hogan Systems Inc. in Dallas and a consumer-loan origination system developed by American Management Systems Inc. in Fairfax, Va.

Although both Bank of America and FleetBoston have engaged in offshore application maintenance, each has a history of proprietary application development, "and I don't see that changing anytime soon," Eckenrode said.

But Bradway said that as systems consolidation and conversion work proceeds, the need to retain two application development and maintenance teams will be reduced.

Bank of America said Eugene McQuade, FleetBoston's president, will hold a similar job at the combined company and will have overall responsibility for IT. But the spokeswoman said a CIO probably won't be chosen until mid-2004. Tim Arnoult is the top IT executive at Bank of America, and Joseph Smialowski is his counterpart at FleetBoston. 42514

Key Facts and Figures

	BANK OF AMERICA	FLEETBOSTON
Total assets	$737.1B	$196.4B
Annual IT spending	$2.75B*	About $1B*
Top IT executive	Tim Arnoult	Joseph Smialowski
Number of IT workers	2,200	1,700

* ESTIMATE BY TOWERGROUP, NEEDHAM, MASS

Continued from page 1

Life-cycle Tools

What Medeiros really needs is wider interoperability between rival products to make a planned storage management consolidation project possible. Medeiros, who manages 300TB of storage capacity at a data center in New Jersey, said he wants to tie in an additional 400TB that's spread among 1,500 UPS offices worldwide.

Information life-cycle management was one of the most talked-about topics at last week's conference, which was co-sponsored by Computerworld and the San Francisco-based Storage Networking Industry Association and drew more than 2,600 attendees.

During one packed session, 11% of the audience indicated via electronic polling devices that they have already installed information life-cycle management components. Thirty-three percent said they plan to begin deployments in the next 12 months, and another 30% said they would do so within two years.

Top storage vendors such as EMC Corp., Hewlett-Packard Co., Hitachi Data Systems Corp. and Veritas Software Corp. have announced information life-cycle management software or have said they're developing technology that's designed to support automated storage management approaches (see box).

But Steve Duplessie, an analyst at The Enterprise Storage Group Inc. in Milford, Mass., said information life-cycle management currently is little more than marketing jargon without real products to back up the promises of vendors.

Mark Lewis, EMC's chief technology officer, acknowledged that the technology is still in the early stages of development. "We don't think anyone is doing it well," he said during a press briefing. "We don't think we're doing it well, at least not yet."

First Data Corp. in Greenwood Village, Colo., is one convert. Jerome Wendt, a senior storage analyst at First Data, said he's already planning the payment-processing company's information life-cycle management strategy, which will include the use of storage virtualization software that can pool disk capacity on storage-area networks (SAN).

Wendt is also testing tools from EMC, Veritas and Fujitsu Software Technology Corp. that he hopes will give him better data about the usage of storage capacity on servers and disk arrays than his existing spreadsheet models.

Automated storage management systems would ease headaches for IT managers charged with destroying old data that no longer has to be kept to satisfy government regulators, Wendt said. As part of his plan, Wendt is classifying First Data's information to specify the storage media to be used for different data during its life cycle.

First Data also plans to deploy several tiers of storage, including arrays with low-cost disks that can provide secondary repositories for near-line storage. "By doing that, you free up space on [your primary] storage for mission-critical databases," Wendt said.

But for many other users, information life-cycle management implementations won't happen anytime soon.

Jerry McElhatton, senior executive vice president of global technology and operations at MasterCard International Inc. in Purchase, N.Y., had a blunt message for vendors. "Come back to us when you have something meaningful that will serve a business need and demonstrate a purpose," he said. 42478

Tech Plans

EMC said that during next year's first quarter, it will introduce software that can be used to tie database applications into the data backup process.

HITACHI DATA SYSTEMS announced a deal to resell AppIQ Inc.'s StorageAuthority Suite software, which manages multivendor storage resources.

VERITAS SOFTWARE tomorrow plans to launch Data Lifecycle Manager 5.0, which can move data to secondary and archival storage systems based on the information's age.

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Businessy IT

A READER WRITES: "I am tired of reading about my job possibly moving overseas! When are you going to write about how American IT workers can best prepare for that inevitability? What IT jobs will be available for U.S. workers? What are we IT people supposed to do — become dogcatchers? A humane occupation, but I did not go college to do that! I want to know, specifically, what kinds of jobs will be left after the outsourcing craze, and where will they be?"

What kinds of jobs will be left? Business, not bits.

And where will they be? Everywhere there's business.

Sure, that's an oversimplification. But if you boil down everything that's happened in IT over the past few years, this is it: Anything in IT that doesn't directly engage the business your company is in is unlikely to survive.

That includes pure programming. And pure network management. And pure machine operation. And every other IT-shop job that's pure technology.

In fact, any job that's exactly the same in every IT shop is a candidate for outsourcing.

OK, slice away that IT work. What's left?

All the jobs that aren't pure IT. The "businessy" IT jobs. The ones that require meeting with users. And listening to users. And *understanding* users — and the business.

Sometimes those jobs have the same names as the pure-IT jobs. But we all know the difference. When a programmer/analyst turns requirements into code, that's pure IT. But when a programmer/analyst manages to tease out requirements from users that they weren't able to articulate, that's not pure IT. It's a little listening, a little psychology, a little sweet-talking, a little imagineering — and, of course, a lot of IT understanding.

When a systems or network administrator calculates capacity and optimizes how the servers and networks run, that's pure IT. But when someone with the same title locates and clears a recurring trouble spot for salespeople or looks ahead to avoid a holiday order-fulfillment bottleneck, that's using IT to make the business work better.

When a support tech answers a technical question, that's pure IT. When that tech removes a problem or a glitch that's interfering with a user's ability to extract money from customers' pockets — well, that's what business is all about.

The big difference isn't in how technical the jobs will be. No business needs an IT department that's dumbed down. Businesses need IT shops that are just as smart about technology — and a lot smarter about business and users.

In other words, we have to think like IT people *and* users.

That may be the single hardest thing for many IT people to accept. For those of us who define ourselves in terms of technology, users are the "them" to our "us." We take pride in the fact that we're different from users.

But in the future, what will get us jobs is the fact that we're like them. And we understand them. And we can help them stay focused on business.

Of course, you probably didn't go to college for business any more than you did for dogcatching. You went for technology, right? So you face a choice. The edge your education gave you is no longer enough. Offshore programmers and techs have educations that are just as good, but they've got a lower cost structure. When it comes to bits, you've been underbid.

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So you can either resign yourself to being another IT commodity — or raise your value by becoming a businessy IT person.

Doing that will mean work. And change. And new ideas. You won't be as good at it as you've become at pure IT, at least not at first. But if you can do it, you won't just keep your job. You'll gain a whole new understanding of how technology works in a business.

After all, it really isn't "business, not bits."

It's business *and* bits. 42467

SHARK TANK

Sign of a True Professional

High-priced management consultants need some information at this hospital, so they ask IT pilot fish to run reports and watch as he signs onto the 30-year-old system through a PC terminal emulator. "But I've worked with this system for almost 10 years and go through the menus rapidly, printing off the information they asked for," fish says. One consultant comments approvingly that fish has worked for five minutes and never touched the mouse – the sign of a true professional. Fish chuckles, "I didn't tell them that the system was so old it didn't *recognize* the mouse."

Oops!

Urgent call comes to IT pilot fish from this user, who says his printer "just stopped." "I couldn't figure how it ever worked," fish says. "It had no printer drivers for that network printer." Turns out user wanted to stop printing a large file, so he decided to delete the job. "I reinstalled the printer driver," says fish, "but when I explained to him that it doesn't work too well if you delete the driver while it's printing, he just left the room."

None of the Above

This computer-based training system is screwy, manager tells IT pilot fish. A new hire scored 79%, with 80% as a passing grade, so other workers pitched in to help her when she retested. "Her grade on the retest was 70%," says fish. "A third try, with even more co-workers adding input, came out to 65%." An hour later, with no help, she passes the test. Rather than fixing the system, "now I'm contemplating making all the staffers who 'assisted' her retake the test," says fish.

Not the Right Question

It's the 1980s, and senior execs throw a meet-and-greet session for employees when these two computer companies agree to merge. "This was very unusual," says IT pilot fish, "since the senior execs are as imperious a group as you could ever imagine." Fish recognizes the chairman and CEO and introduces his team. "We do systems management in corporate operations IT," fish explains. Big cheese hesitates a moment, then asks, "What is IT?"

The Power Of the Internet

Electricity to this university building must be shut down while electricians move power lines outside. One graduate student asks pilot fish for a flashlight so she can continue working on her laptop in her office. You'll need to run on your laptop's batteries while the power is off, fish explains dubiously. "Oh, I don't need power," she tells him. "I use the Internet."

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